ATLANTIC JOURNAL,

AND

FRIEND OF KNOWLEDGE:

A CYCLOPEDIC JOURNAL AND REVIEW

OF UNIVERSAL SCIENCE AND KNOWLEDGE:

HISTORICAL, NATURAL, AND MEDICAL ARTS AND SCIENCES:

INDUSTRY, AGRICULTURE, EDUCATION, AND EVERY USEFUL INFORMATION:

WITH NUMEROUS FIGURES.

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Knowledge is the mental food of man.

INTRODUCTION.

PERIODICALS abound in the United States; but those calculated to improve and instruct, to scatter the seeds of learning, and become eminently useful by rendering all kind of knowledge and improvements popular, are as yet but few and costly; thus beyond the means of those whom they are most likely to benefit. It is such a deficiency that this journal is partly intended to supply.

It is contemplated therefore to publish, in the city of Philadelphia, a new periodical journal under the above title. It will be conducted by Prof. RAFINESQUE, assisted by several gentlemen of considerable talent and knowledge.

This journal shall contain every thing calculated to enlighten, instruct, and improve the mind. It will not be confined to any particular branch of literature and science, but embrace by turns every subject useful or interesting. Agriculture and economy, with discoveries in the useful arts and practical sciences, will claim peculiar attention. Literature shall not be forgotten; it is also a branch of knowledge, but facts shall have the preference over fiction. Reviews will be introduced on the new plan of stating the increase of knowledge afforded by books. The whole is intended to be original matter; selections shall seldom be resorted to.

This journal is ventured without any pretensions, and none of the usual pompous promises. It will be of a strikingly novel character, and must be left to speak for itself; to deserve by its own intrinsic value and merit the patronage which it claims from all the friends of knowledge, education and learning.

The Editor being always in pursuit of knowledge, will be able to furnish most of the articles, when not proffered by his collaborators. The subscription is limited to ONE DOLLAR per annum, or TWO DOLLARS for each volume of twelve numbers, or four hundred pages, title-page, index, and nearly fifty figures. This periodical is begun in a quarterly form, but it is hoped may soon become a monthly journal.

Communications for this Journal, may be left at the post office or sent by mail, postage paid. None will be calculated for this paper unless very terse and concise, either useful or novel in character or purpose: new facts will be acceptable above all. Anonymous papers or Reviews will very seldom be accepted. Every writer ought never to be ashamed of his pen and deeds. The initials of C. S. R. will designate the editorial articles.

1. LATENT KNOWLEDGE.

Besides the actual active knowledge of mankind, formed by the accumulation of exertions in all the branches of human acquirements; and spread in the numberless books

on education, the arts and sciences, history and literature: there is another mass of knowledge, which may be called latent or sleeping. The amount of it is much greater than could be supposed. There are in all the branches of knowledge, some portions nearly forgotten and lost, which gradually sink into oblivion and are lost to mankind; like the immense amount of facts, events and practices, which have thus become extinct during the lapse of ages.

If all the extinct knowledge was yet existing, it might exceed perhaps what is now extant, although we deem it prodigious. Every friend of learning has to regret the loss of some past knowledge, of which faint indications or small fragments merely remain. But if the latent knowledge be added, as it is eventually by the neglect of ignorance, the whole of this dormant or forgotten, together with the dead or lost, both of which are now rendered useless to mankind, will be found prodigious.

But fortunately the latent or dormant may yet be restored and rendered available, by care, patient researches and exertions. It is to be found scattered in old books, or even new publications of limited circulation, in manuscripts, in the memory of men, in monuments that speak a peculiar language to be learnt and restored. All this among us. But further off, we have in the literature and books of Asia from Persia to India, China and Japan, an inexhaustible mine of learning, hardly explored as yet. The Asiatic nations, were the first teachers of mankind; their western children who boast of having surpassed them in every thing, have neglected their old teachers for ages; but now begin to interrogate them again.

Our attention shall often be drawn towards this subject. It is deplorable to see the servility, laziness and ignorance of many of our popular writers on all subjects. They will not take the trouble to enquire; they bow to some idols of yore, and copy or compile from them without discernment nor careful investigation of previous labours by other men or nations. We can hardly open a work of history, travel, or science, without meeting thousand instances of neglect and ignorance. All our books of education are sadly deficient, except on those matters lately investigated. Facts, events and discoveries without number are set aside, not attended to, or even not known. To this shameful practice, which threatens a true Vandalic destruction of knowledge, we mean to draw the attention of the public, and expose it in all its turpitude and injurious bearings. C. S. R.

2. PUBLIC INSTRUCTION.

Free Institutions of Paris and France.

The following concise account of those Institutions, and their wonderful effect upon the French people, is not derived from any doubtful source or formal friend; but chiefly from the pen of Sir Arthur Faulkner, an Englishman, who visited France in 1827 for the purpose of investigating the subject of such free Institutions: and from an analytical abridgement of the work published by him on his return. They are obvious and luminous facts, speaking volumes in favour of free Education.

The total number of general schools in Paris was 647 in 1827, having 60,000 scholars. They were chiefly 294 Infant schools, all gratis, teaching reading, writing, and arithmetic, and elements of drawing.

53 primary schools for boys.
51 ditto for girls.
22 Sunday schools.
12 Schools of mutual Instruction for boys.
5 ditto for girls.
100 Boarding schools for boys.
110 ditto for girls.

Besides innumerable peculiar schools of Drawing, Painting, Ar-

chitecture, Masonry, Carpentry, Music, Languages, Mathematics, and all the sciences.

The schools are all free and gratuitous, except the Boarding schools. The girls are taught sewing, handy-work, embroidery, and all the trades suitable and befitting females to earn a living!

There are also schools for the unfortunate, for the blind, the lame, the cripples, the deformed, all of which are taught trades suitable to their state, and enabling them to earn their living by useful labor.

There are 34 public libraries in Paris, all free to every one, open and accessible every day, with polite librarians and servants to help readers. The largest, or the royal library, contains 500,000 volumes! the next 170,000, the third 93,000. The library of the Institute has 70,000 volumes, the city library 42,000; the other from 2000 to 30,000. French books are printed and sold at one-third of the price of English books, with a rapidity beyond belief, and thus circulated all over Europe. Old books and second-hand books are sold for a mere trifle in the streets by 1000 pedlars, or on benches.

The public garden and museum, are the Emporium and palace of natural sciences. Open and free to every one; in the garden, agriculture and gardening are taught gratis, and seeds given to all who apply. All the natural sciences are taught by free lectures and demonstrations to whoever attends.

The Louvre, or palace of fine arts, is opened to the public every day, even Sundays, and crowded by visitors.

Fifty other Institutions have peculiar Cabinets, Museums, Galleries, with free admittance and free lectures; in all the medical sciences, History and Literature, Mining, Engineering, &c.

No fees are taken by Professors and Assistants, for teaching, demonstrating and waiting on visitors. No present is allowed, much less exacted as in England by servants and underlings.

The same happens all over France. Free schools are scattered over the whole country, and free Institutions, Libraries, Museums, Gardens, Lyceums, &c., in all the principal towns and cities. Lectures on Farming are given by practical farmers, on trades by mechanics.

The expenses of these free Institutions are borne by the state, the cities, or foundations for the purpose; but chiefly paid out of the public expense, under the title of Public Instruction. The most useful, and most honourable mode of spending public money.

Consequences.

The happy results of this state of things, are that the French are become a great people, at the head of civilized Europe, and withal a moral people! much better off and more moral than the English. The former idle gallantry and vicious courses are become quite uncommon. The French peasantry are industrious, frugal, orderly, kind, cheerful and contented. There are no paupers as in England. A few beggars only are licensed under peculiar circumstances, if unlicensed they are taken up as vagabonds. Vices and crimes are much less in number and atrocity than in England. Wine sells every where for one to three cents the bottle, yet intoxication is hardly known. No brandy, and no alcoholic liquors are drunk to poison and brutalize the body and mind.

Sir A. Faulkner exclaims in despair: "England is famous for charities to the helpless, but neglects to prepare the people to help themselves. When we reflect on the peculiar facilities of access to books, lectures, museums, cabinets, &c. in Paris and all over France, *gratis to all*, we have a ready solution why the French community at large are so much advanced in civilization and refinement, before any other

country in the world!" This confession comes from an Englishman.

In the United States, we imitate, as yet, England in almost every thing, good or bad. Thus we can hardly believe that it is possible to have Free Institutions, Colleges, Lectures, Libraries, Museums, &c. without paying at least a fee of 25 cents each time we visit them, or an annual subscription. And thus we have intemperance, immorality, paupers, ignorance—with all their baneful consequences. What ought to be done, and what free Institutions are immediately required to foster, preserve and secure, the future liberties and morals of our people, will be indicated at a future time. Public Instruction or the acquirement of knowledge, by all young and old, unlimited and without cost, must be the principal means of future national happiness.

BENJ. FRANKLIN, JR.

3. PHILOLOGY.

First Letter to Mr. CHAMPOLION, *on the Graphic systems of America, and the Glyphs of* OTOLUM *or* PALENQUE, *in Central America.*

You have become celebrated by decyphering, at last, the glyphs and characters of the ancient Egyptians, which all your learned predecessors had deemed a riddle, and pronounced impossible to read. You first announced your discovery in a letter. I am going to follow your footsteps on another continent, and a theme equally obscure; to none but yourself can I address with more propriety, letters on a subject so much alike in purpose and importance, and so similar to your own labours.

I shall not enter at present into any very elaborate discussion. I shall merely detail in a concise manner, the object and result of my inquiries, so as to assert my claim to a discovery of some importance in a philological and historical point of view; which was announced as early as 1828 in some journals, (3 letters to Mr. M'Culloh on the American nations,) but not properly illustrated. Their full development would require a volume, like that of yours on the Egyptian antiquities, and may follow this perhaps at some future time.

It may be needful to prefix the following principles as guides to my researches, or results of my inquiries.

1. America has been the land of false systems; all those made in Europe on it are more or less vain and erroneous.

2. The Americans were equal in antiquity, civilization, and sciences to the nations of Africa and Europe; like them the children of the Asiatic nations.

3. It is false that no American nations had systems of writing, glyphs, and letters. Several had various modes of perpetuating ideas.

4. There were several such graphic systems in America to express ideas; all of which find equivalents in the east continent.

5. They may be ranged in twelve series, proceeding from the most simple to the most complex.

1st Series.—Pictured symbols or glyphs of the Toltecas, Aztecas, Huaztecas, Skeres, Panos, &c. Similar to the first symbols of the Chinese, invented by Tien-hoang before the flood, and earliest Egyptian glyphs.

2d Series.—Outlines of figures or abridged symbols and glyphs, expressing words or ideas; used by almost all the nations of North and South America, even the most rude. Similar to the second kind of Egyptian symbols, and the Tortoise letters brought to China by the *Long-ma* (dragon and horse) nation of barbarous horsemen, under *Sui-gin*.

3d Series.—Quipos or knots on strings used by the Peruvians and several other South American nations. Similar to the third kind of Chinese glyphs introduced under *Yong-ching*, and used also by many nations of Africa.

4th Series.—Wampums or strings

of shells and beads, used by many nations of North America. Similar to those used by some ancient or rude nations in all the parts of the world, as tokens of ideas.

5*th Series.*—Runic glyphs or marks and notches on twigs or lines, used by several nations of North America. Consimilar to the runic glyphs of the Celtic and Teutonic nations.

6*th Series.*—Runic marks and dots or graphic symbols, not on strings nor lines, but in rows; expressing words or ideas; used by the ancient nations of North America and Mexico, the Talegas, Aztecas, Natchez, Powhatans, Tuscaroras, &c. and also the Muhizcas of South America. Similar to the ancient symbols of the Etruscans, Egyptians, Celts, &c. and the *Ho-tu* of the Chinese, invented by *Tsang-hie;* called also the *Ko-teu-chu* letters, which were in use in China till 827 before our era.

7*th Series.*—Alphabetical symbols, expressing syllables or sounds; not words, but grouped; and the groups disposed in rows; such is the graphic system of the monuments of Otolum, near Palenque, the American Thebes. Consimilar to the groups of alphabetical symbols used by the ancient Lybians, Egyptians, Persians, and also the last graphic system of the Chinese, called *Ventze*, invented by *Sse-hoang*.

8*th Series.*—Cursive symbols in groups, and the groups in parallel rows, derived from the last, (which are chiefly monumental,) and used in the manuscripts of the Mayans, Guatimalans, &c. Consimilar to the actual cursive Chinese, some demotic Egyptian and many modifications of ancient graphic alphabets, grouping the letters or syllables.

9*th Series.*—Syllabic letters expressing syllables, not simple sounds, and disposed in rows. Such is the late syllabic alphabet of the Cherokis, and many graphic inscriptions found in North and South America. Similar to the syllabic alphabets of Asia, Africa, and Polynesia.

10*th Series.*—Alphabets or graphic letters expressing simple sounds, and disposed in rows. Found in many inscriptions, medals, and coins in North and South America, and lately introduced every where by the European colonists. Similar to the alphabets of Asia, Africa, and Europe.

11*th Series.*—Abreviations or letters standing for whole words, or part of a glyph and graphic delineation, standing and expressing the whole. Used by almost all the writing nations of North and South America, as well as Asia, Europe, and Africa.

12*th Series.*—Numeric system of graphic signs, to express numbers. All the various kinds of signs, such as dots, lines, strokes, circles, glyphs, letters, &c. used by some nations of North and South America, as well as in the eastern continent.

In my next letter I shall chiefly illustrate the 7th and 8th series, so as to decypher and explain one of the most curious and least known of the American modes of expressing and perpetuating ideas. I shall give a figure of a sample of those monumental symbols, with comparative figures of two alphabets of Africa, the nearest related to them, and where the elements may be traced, which are grouped in those glyphs.

Some years ago, the Society of Geography, of Paris, offered a large premium for a voyage to Guatimala, and a new survey of the antiquities of Yucatan and Chiapa, chiefly those fifteen miles from Palenque, which are wrongly called by that name. I have restored to them the true name of Otolum, which is yet the name of the stream running through the ruins. I should have been inclined to undertake this voyage and exploration myself, if the civil discords of the country did not forbid it. My attention was drawn forcibly to this subject as soon as the account of

those ruins, surveyed by Capt. Del Rio as early as 1787, but withheld from the public eye by Spain, was published in 1822 in English.

This account, which partly describes the ruins of a stone city 75 miles in circuit, (length 32 English miles, greatest breadth 12 miles,) full of palaces, monuments, statues, and inscriptions; one of the earliest seats of American civilization, about equal to Thebes of Egypt; was well calculated to inspire me with hopes that they would throw a great light over American history, when more properly examined.

I have been disappointed in finding that no traveller has dared to penetrate again to that recondite place, and illustrate all the ruins, monuments, with the languages yet spoken all around. The society of Geography has received many additional accounts derived from documents preserved in Mexico; but they have not been deemed worthy of the reward offered for a new survey, and have not even been published. The same has happened with Tiahuanaco in Bolivia and S. America, another mass of ancient ruins and mine of historical knowledge, which no late traveller has visited nor described.

Being therefore without hope of any speedy accession to our knowledge of those places, I have been compelled to work upon the materials now extant, which have happily enabled me to do a great deal, notwithstanding all their defects, and throw some light on that part of the history of America.

C. S. Rafinesque,
Philadelphia, January, 1832.

4. AMERICAN HISTORY.

Tabular View of the American Generic Languages, and Original Nations.

One of the most glaring errors of speculative philosophers on the subject of America, is to be found in their assertion that American languages and nations are multiplied beyond conception, and cannot be reduced to order. This misconception arose from a superficial knowledge of the matter, and a wish to assert extraordinary things. If the same wish had been evinced respecting Europe, they could have found 60 languages and nations in France, and 100 in Italy, by considering the various provincial French and Italian Dialects, as so many languages, since many of them cannot be understood by the respective provincials of the same country. And each provincial group would be a nation, since languages distinguish nations.

Even Balbi, after reducing the 1500 or 1800 supposed American languages and tribes to 422, has not attempted to class them except geographically. I made the attempt ever since 1824 in the Cincinnati Literary Gazette, and have since corrected my classification, reducing the 1800 American Dialects to about 25 Generic languages, which belong to the original nations of America, many of which have yet as much affinity as the Latin and Greek, or English and German.

They are the following, 14 from North and 11 from South America.

1. *Languages and Nations of North America.*

1. Uskih, divided into about 30 Dialects and tribes; such as Esquimaux, Mœuts, Chugach, Aleutian, Chuchi, &c. spoken all over Boreal America, from Bering strait and Alaska to Labrador and Groenland.

2. Onguy, about 50 dialects and tribes; Huron, Onondaga, Seneca, Hochelaga, Tuscorora, Notoway, &c. extending from the Pacific ocean to Canada and Carolina.

3. Lenap, nearly 250 dialects and tribes; such as Chinuc, Dinneh, Algic, Shawan, Miami, Micmac, Mohegan, Nantico, Powhatan, &c. extending from the Columbia river on the Pacific ocean to Hudson bay, New England and Florida.

4. Wacash, about 60 dialects and tribes; Atnah, Chopunish,

Coluch, Chingita, &c. spoken from California to latitude 55 in the north west coast of America.

5. Skereh, above 125 dialects and tribes; Panis, Seris, Pakis, Lepan, Shoshoni, Opata, Uchis, Poyay, &c. extending from Slave lake to California, Texas, Florida, and Honduras.

6. Nachez, nearly 75 dialects and tribes; Cado, Yatasih, Wocon, Cuza, Cataba, &c. extending from Sinaloa in the West to Carolina in the East.

7. Capaha, about 50 dialects and tribes; Washasha, Yatani, Oto, Ochagra, Dacota, &c. extending from the head of Missouri river to the Wabash and Arkanzas rivers.

8. Chactah, above 40 dialects and tribes; Chicasa, Yazu, Coroa, Humah, Muskolgih, Seminole, &c. extending from Texas to Florida.

9. Otaly, about 25 dialects and tribes; Tsuluki or Cherokées, Tallegha, Talahuicas, Talahasi, &c. extending from the Alleghany mountains to the mountains of Mexico.

10. Atalan, about 25 dialects and tribes; Tala or Tarasca, Matalan, Tulan, Tecas, Tolban, Colima, Tarahumara, &c. extending from New Mexico to Michuacan, and Nicaragua.

11. Otomi, about 20 dialects and tribes; Miges, Dotami, Mazahuy, &c. extending from Arkanzas to Mexico.

12. Aztec, about 20 dialects and tribes; Tolteca, Olmeca, Cora, Pipil, &c. extending from Mexico to Nicaragua.

13. Maya, about 40 dialects and tribes; Huazteca, Poconchi, Guichi, &c. extending from Texas, to Yucatan and Guatimala.

14. Chontal, about 50 dialects and tribes; Tzendal, Choles, Locas, Lencas, Zoques, Quelen, Chiapan, &c. extending from Chiapa to Panama.

2. *Languages and Nations of South America.*

15. Aruac, having nealy 100 dialects and tribes; such as Haytian, Cuban, Yucayan, Eyeri, Cairi, Arara, Cumana, Arayas, Aragoas, &c. extending from the islands of Bahama and Cuba, to Coro, Cumana, Guyana and Brazil.

16. Calina, about 122 dialects and tribes; Carib, Galibi, Yaoy, Tamanac, Guarivas, Gotos, Chaymas, Gutacas, &c. spread from the Carib islands to Darien, Oronoco, Guyana and Brazil.

17. Puris, about 90 dialects and tribes; Maypuris, Achaguas, Coropos, Camacan, Parexis, Parias, &c. extending from Paria and the Oronoco to Brazil and Paraguay.

18. Yarura, about 25 dialects and tribes; Betoy, Ayrico, Ele, Yaros, Charua, Ozomaca, Gauna, &c. spread from the river Oronoco to the river Parana and Popayan.

19. Cuna, about 25 dialects and tribes; such as Uraba, Darien, Cunacuna, Choco, Cocinas, &c. spread from Panama to Coro and Popayan.

20. Mayna, about 60 dialects and tribes; Yameos, Amaonos, Manoa, Cauchas, Panos, Managua, Solimos, Aguanos, &c. spread from Popayan and Quito to the Maranon and Parana.

21. Maca, about 100 dialects and tribes; Muhizca, Yuncas, Zamuca, Pancha, Moxos, Otomacas, Tao, Pinoco, Chaco, &c. spreading throughout South America from Cundinamarca to Peru and Brazil.

22. Guarani, nearly 500 dialects and tribes; Tupi, Omagua, Cocama, Guyana, Payagua, &c. spread throughout Brazil, and from the Andes to the Atlantic sea, as far south as Buenos Ayres.

23. Maran, about 50 dialects and tribes; Quichua, Aymaru, Muras, Marahas, Andoa, Moratas, Zapibo, Cuyaba, &c. spread from Peru in the west to Brazil in the east on both sides the Equator.

24. Lule, about 25 dialects and tribes; Vilela, Mocobi, Abipon, Toba, Atalala, &c. spread through Chaco, Tucuman and Paraguay.

25. Chili, about 20 dialects and

tribes; Puelche, Chonos, Araucan, Tehuelet, Yacanac, Kemenet, &c. spread all over Austral America from Chili to Magelania and Fuego islands.

Even these 25 Languages and Original Nations may perhaps be reduced to 18 by more accurate investigation; thus the 4th and 5th may become united; as well as 6 and 8, 7 and 11, 9 and 10, as they have considerable analogies. The same may happen in South America with 15, 16 and 19, also with 17, 18 and 20, which approximate by gradual dialects. C. S. Rafinesque.

July 4th, 1829.

Remark.—The above was published in the Evening Post; it is now reprinted because it is the key to American Ethnology, Philology and History! The proofs would fill volumes. It is results that analytical Sciences chiefly require. The wide extent of Nations 1, 2, 3, 12, 15, 16, 22, were already acknowledged: the others depend on my researches, and are open yet to many improvements, nay, I have effected some since 1829.

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5. The Atlantic *Nations of America.* By C. S. Rafinesque.

The Ocean separating Europe and Africa from America is yet called the Atlantic ocean, our litoral states are called the Atlantic states. The Atlantes of North Africa who gave their name to the Atlas mountains, and whose descendants exist there as yet under the names of Tuarics, Berbers, Shelluh, Showiah, &c. were one of the primitive nation of both continents. They came to America soon after the flood, if not before, colonised and named the Ocean and the islands in it, as well as America, which was called the Great Atlantis, or rather ATALA, meaning the *first or main land.* This name is preserved in Hindu traditions. The Atlantes were not the only primitive colonists of America; but they were the most conspicuous and civilized. Their true name was Atalans. They may have been the founders of Otolum and many other ancient cities. Their descendants *exist to this day* in America, under the names of Talas or Tarascas, Atalalas, Matalans, Talegawis, Otalis or Tsulukis, Talahuicas, Chontalas or Tsendalas, &c. from Carolina to Guatimala.

When Columbus discovered again America, he and the earliest explorers were struck with the similarity between many American tribes, and the Guanches of the Canary islands, remains of the Oceanic Atlantes, in features, manners and speech. Whether the Haytians, Cubans, and Aruacs were genuine Atlantes is rather doubtful, because their language is more akin to the Pelagic than the Atlantic. But three at least out of the twenty-five original nations of America above enumerated may safely be deemed children of the Atlantes. They are the ninth or Otalis, the tenth or Atalans, and the fourteenth or Chontals.

This could be proved in many ways, and by their languages compared with those of their African brethren, Tuarics, Guanches, &c. after a separation of nearly 5000 years. But the proofs would fill a volume.

Our actual Cherokis and akin tribes are the children of the first branch, named Otalis. This was their original name. Adair only 100 years ago says that the genuine or upland Cherokis were called Otalis, which name meant mountaineers as in Africa. They call themselves now Tsulukis. Our name of Cherokis is derived from the word Chelakis, name of a tribe. They have not the sound of R in their speech. Only one tribe substitutes R to L. The interesting history of this nation shall deserve our attention hereafter. The Chontal branch or nation will come under notice in investigating the antiquities of Otolum

or Palenque. It remains here to survey the genuine branch of ATALANS, eldest perhaps of the American Atlantes.

Among this, the best known (and yet hardly known) are the Tarascas of Michuacan in West Mexico: the brave nation that first asserted the late Mexican Independence. Their true name is TALA, and TALA, S, CA, meaning *Tala, self, the*, or in our idiom *the veryself Tala*. They have no R in their speech, and this name was changed by the Othomis and Mexicans into TARASCAS. See grammar of their language by Basalenque, Mexico, 1714.

From this interesting little work, some other account from Vater, and the Spanish writers we learn something of their language which is yet spoken and may be thoroughly studied. We also learn that they formed a powerful and civilized kingdom independent of Mexico at the Spanish Invasion, which became the ally of the Spaniards; but was by them, subdued by treachery and infamous conduct. But we learn very little of their previous history: and the little known is buried in untranslated Spanish books. It is by their language that we can hope to trace their origin and most remote history. *Languages do not lie*, says Horne Tooke. They reveal what time has buried in oblivion.

We shall therefore give some account of it, that the learned or curious may study its affinities. So far as we have done so already, we have been struck with its evident analogy with the Atlantic, Coptic, Pelagic, Greek, Latin, and Italian languages of Africa and Europe, both in words and structure, in spite of a separation of four or five thousand years.

This language is rich, beautiful, and highly complex. It amalgamates particles to modify the words, as in Italian. The verbs have fifteen modifications, as in Italian, or nearly so; they can be compounded as in Greek. It admits of all the Greek rhetorical figures. The plural is formed by X. It has nearly all the European vocal sounds except F and R; also no GN and no LL; but it has three sibilant TS, TZ, and TZH.

The analogies with the Italian are striking in the following phrases, and some even appear with the Saxon English.

English.	*Tala.*	*Italian.*
1. Thou	Thu	Tu
2. Was (wast)	Esca	Sei (fosti)
3. Thou who	Thuqui	Tu che
4. Spoke	Vandahaca	Favelasti
1. I	Hi	Io
2. Was	Esca	Sei (fui)
3. I who	Hiquinini	Io che
4. Loved	Pampzahaca	Amai
1. Is not	Noxas	Non E
2. So wise	Mimixcti	Amico (savio)
3. As I	Isqui hi	Com'io

The following vocabulary of 85 words, gives a fair sample of the language. The affinities with the Pelagic and its children, Greek, Latin, Etruscan, and Italian, are marked by the letter P; those with the Atlantic dialects of Africa, with the letter A. They amount to 50 out of 85 with the Pelagic, or 60 per cent. of analogy; and to 33 out of 65 with the Atlantic, or 51 per cent. These are striking facts, deserving attention, in spite of the unbelief of some ignorant or lazy philosophers or historians, who neglect or disbelieve these evident proofs. The sixteen English affinities are marked by an asterisk. The orthography is, of course, Spanish.

English.	*Tala.*	
Water	Ama, Ma.	A. P.
Fire	Pa, Vepo, Tani.	A. P.
*Land	Haca, Eche, Andatze.	A. P.
Stone	Tzacapu, Zampsin.	A. P.
Men	Cuiri.	A.
	Puecha.	P.
	Marin.	P.
Dog	Vichu.	A.
*Mountain	Vata.	A.

English.	*Tula.*
Star	Hosqua.
Day	Vina. P.
Night	Ahchiuri, Tzire.
*Heaven	Parini, Avandu. A. P.
*House	O, Chuo. P. A.
*Father	Tata. A. P.
Mother	Nana. P.
Hand, Arm	Cu, Xu. A.
Foot	Du. A.
Head	Tsi. P.
*Mouth	Mu. A. P.
Beard	Hapu. P.
End, Tail	Yara. P.
One	Mah.
Alone	Mahco.
Ten	Xam. P.
Much	Cani. A.
*Priest	Amberi. P.
	Quinametin.
God	Tucapacha. A.
Just	Casipeti.
Good	Ambaqueti.
Wise,Friend	Mimi. P. A.
Little	Caxeti.
Tree	Emba, Ches. A. P.
Bark	Chucari. P.
Leaf	Xahcuri.
Bread	Curinda. A.
*Colour	Chara. P.
Plain	Pe. P.
Sand	Cutza.
Peak	Phurequa. P.
Evil	Sismaraqui, Himbe.
Boat	Xu. A.
*Self	S. (P.
*I, Me	Hi. (P. A.
Myself	His. (P. A.
*Thou	Thu. (P.
Thine	Thuicheveri.
You	Thucha.
Yours	Thuchaveri.
We	Hucha.
Ours	Huchaveri.
This	I. (P.
These	Ix.
That	Inde, Ima.
Mine, Own	Huchevi.
Be	E. (A. P.
To be	Eni. A. P.
I am	Ehaca. A. P.
*Is	Esti. A. P.
Was	Esca. A. P.
*Place,Earth	Can, Haca. A. P.
King	Irecha. A. P.

English.	*Tula.*
Kingdom	Arikeve. P.
Name	Acan, Guriqua.
Fish	Mechoa. P.
*City	Fatziza. P.
Deer	Taximaroa.
Festival	Metotes, P.
To give	Inspeni.
To write	Carani. P.
To say	Harani. P.
To hold	Uhcamani.
To wash	Hopo.
To think	Hangue. P.
To take	Piran. P.
To come	Hurani. P.
	Tirovi.
Food	Caro, Aqua. P. A.
Drink	Itsima. A.
Handsome	Tzitzis. A.
Living	Tzipeti. P.
To live	Tzipeni.
Singer	Pireti. P.
To sing	Pireni.
*Not	Noxas. P. A.
*Like, As	Isqui. P.
Love	Pampza. P.
Speech	Vanda. P.
Who,Whom	Qui. P.
The	Ca.

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6. *William Penn's Deed from the Indians in* 1685.

This indenture witnesseth, that —We, Parkenab, Jarckan, Sikals, Partquesott, Jervis Essepenank, Felktroy, Hekellappan Econus, Machlola, Metthconga, Wissan Powey, Indian Kings, Sachemakers, right owners of all lands, from Quing Quingan, called Duck creek, unto Upland called Chester creek, all along by the west side of Delaware river, and so between the same creek backwards as far as a man can run in two days with a horse, for and in consideration of these following goods to us in hand paid, and secured to be paid by William Penn, proprietary and governor of the province of Pennsylvania and territories thereof, viz: 20 guns, 20 fathoms match coat, 20 fathoms of strong water, 20 blankets, 20 kettles, 20 pounds powder, 100 bars of lead, 40 tomahawks, 100 knives, 40

pair of stockings, 1 barrel of beer, 20 pounds of red lead, 100 fathoms of wampum, 30 glass bottles, 30 pewter spoons, 100 awl blades, 300 tobacco pipes, 100 hands of tobacco, 20 tobacco tongs, 20 steels, 300 flints, 30 pair of scissars, 30 combs, 60 looking glasses, 200 needles, 1 skipple of salt, 30 pounds of sugar, 5 gallons of molasses, 20 tobacco boxes, 100 Jews harps, 20 hoes, 20 gimblets, 30 wooden screw boxes, 100 string of beads—Do hereby acknowledge, &c. Given under our hands, &c. at New-Castle, 2d day of the Eighth month, 1685.

The above is a true copy taken from the original by Ephraim Morton, now living in Washington county, Pennsylvania, formerly a clerk in the land office, which copy he gave to Wm. Hutton, and from which the above is taken in Little York, this 7th of December, 1813.

Remarks.—The above deed copied from the Ephemeral Press, is not yet recorded in history; but deserves to be. It was the first instance of a colonist having bought a country from an European king, who had no more right to it than the king of the moon, buying again from the real owners of it. It is the first title deed of the great state of Pennsylvania. Yet the good W. Penn did not pay the full value to the 10 ignorant Indian Chiefs, and his example has been closely followed to this day. He bought by that deed about 2000 square miles of good land for about $800, which is now worth as many millions, and was then worth at least $10 the square mile instead of 15 cents paid for it.

Yet this deed is not explicit enough, at least as it was printed, because it does not state how much land was ceded and sold, unless they sold their whole domain from the Delaware to the Susquehannah between Duck creek and Chester creek, and the sale be implied by (he &c. &c., or not printed. We doubt whether this deed would be good in a court of law or equity. It is chiefly curious by the enumeration of the articles given, some useful and some useless, like the Jews harps. We strongly suspect that this deed alludes merely to the first presents made by the worthy W. Penn to procure the good will of the Indians, and has since been construed into a sale of the whole territory of these Lenap Indians, of whom Parkenab must have been the great sachem. It is well known that at a second treaty held at Shackamaxon, now Kensington, another friendly alliance (or sale) was made. The subsequent history of Pennsylvania after Penn, affords many instances of injustice to the friendly Lenaps.

7. METEOROLOGY.

Climate of Rochester in New York, chiefly based upon the observations and tables of the Genesee Farmer for 1831.

Rochester is the most thriving town in the western part of the great state of New York. It is situated at the intersection of the Genesee River and Great Erie Canal, near the falls of the Genesee and not far from Lake Ontario, towards latitude 43.

The extremes of temperature were 95 degrees on the 3d June, and 4 below 0 on the 7th February. Difference 99 degrees, medium 45½ degrees. The highest medium was in September 61 degrees, the lowest December 10 degrees. The mean atmospheric pressure was 29 degrees 51 minutes.

The number of rainy days were 115, and 27 inches of rain fell, in July alone 5 inches. As many as 66 snowy days were noted with 76 inches of snow fallen, in all the months of the year except June, July, August, and September. The prevailing winds west, south-west, north-west. It is noticed that the temperature of spring water varies from 40 to 60 degrees, medium therefore 50 degrees.

This mean heat of 50 degrees in springs and range of 99 degrees, is an additional proof that the interior of this continent is warmer than the coast and has a lesser range of variation, an usual concomitant effect. Since Portsmouth in New Hampshire on the Atlantic ocean and the same parallel of 43 degrees as Rochester, has a mean temperature of 44 and range of 110. While Detroit in Michigan, still farther west and also near 43 degrees, has 50½ mean heat, with a range of 116. It must be added that Rochester and Detroit are both much above the level of the ocean and ought therefore to be colder on a par.

Parallel of 43 degrees latitude.

1. Portsmouth, level of the sea, 44 degrees mean heat, range of 110 degrees.

2. Rochester, 480 feet above the sea, 45½ mean heat of the air, 50 of the springs, range 99.

3. Detroit, 565 feet above the sea, 50½ mean heat, range 116? is this right?

It is probable that the increase of mean heat and smaller range, is gradual all the way from the Atlantic to the Pacific ocean; where a difference of 12 degrees at least in equivalent temperature and range is found. There the 52 degree of latitude being equal to the 40 degree, near Philadelphia or as warm. The 52 degrees of Europe is also equal to the 40 in China, the eastern part of each continent being colder.

But the different years often give variable results: thus this year, 1832, the winter has been very severe all over North America. The river Delaware was frozen at Philadelphia from the beginning of December to the middle of February, which had not happened for nearly 40 years. In Rochester it is stated that the winter has been more severe than for 20 years past in the Genesee country. By comparative observations made at Albany and Rochester in December last, at sunrise, there has been found a great difference of many degrees of warmth in favour of Rochester, although it is 480 feet above the sea, lat. 43 10, and Albany at tide water in lat. 42 35.

1831.	Albany.	Rochester.	Diff.
Dec. 8th	3° bel. 0	16° ab. 0	19°
9th	2° do.	18° do.	20°
10th	8° do.	14° do.	22°

This is an additional complete proof that the climate improves inland.

The Genesee Country of which Rochester is the metropolis, extends from Pennsylvania or lat. 42, to Lake Ontario in lat. 43½. It contains about 4000 square miles of fruitful soil. The staples are wheat, averaging 20 bushels to the acre, and maize averaging 40 bushels. The mean heat of the vegetating season is 60 degrees.

8. AGRICULTURE.

Results of the Experiments of Recluz *on the Fixed Oils.*

This article is one of those of practical Sciences, which belong at once to many, being connected with Agriculture, Gardening, Chemistry, Economy and Materia medica; this enhances their value.

Fixed Oils of Vegetables are of the utmost importance and use for food, light, cooking, soap, machinery, manufactures, and medicines. It was very needful to ascertain exactly what quantity was afforded by each vegetable, so as to know the most profitable to cultivate, and cheapest to use; this has been done by Recluz, a French chemist, and we give here the analysis of his labours.

All the experiments were made upon one pound of the substance, or 7680 grains weight, and the quantity of oil afforded is stated in ounces.

Almonds 7½ ounces.

Hemp seed 3½ ounces.

Cocos 4 ounces.

Olives 3½ ounces, specific weight 0915, forms solid soap.

Poppy seed 4 oz. specific weight 0922 forms liquid soap.

Arachis or groundnut 8 ounces, fine eatable oil, citron colour, keeps well and makes good soap.

Sesamum or Benny seed 3½ oz. fine sweet oil, limpid and nutrient, but becomes easily rancid.

Pumpkin seed 5¼ ounces, sweet oil, not siccative.

Cornus berries, 4 ounces.

Moringa, or Ben oil, 6 oz. white, concrete, made by heat, smells like noyau.

Euphorbia lathyrus seeds, 8 ounces by ether, 7 by cold expression; medical purgative.

Croton tiglium seeds 9 ounces, green, drastic.

Helianthus or Sunflower 6 oz. sapid sweet oil.

Cyperus esculentus roots 3 oz.

Datura seeds 2½ ounces, medical.

Grape seeds 1½ ounces, by boiling.

Ricinus or Castor oil, 5 to 6 ounces made cold, 7 ounces warm, 12 ounces with shelled seeds.

Sassafras seeds 2½ ounces white oil, medical.

Beech nuts 6 to 7 ounces, sweet, clear, inodorous; gets better by age to the reverse of other oils.

Xanthium or Burr seed, 4½ ounces, sweet oil; gives a fine clear light.

Flax seed 3½ ounces, yellow brown, siccative, fetid.

Walnuts 8 ounces, lemon colour oil, thick, siccative, makes a soft soap, gives 12 ounces when nuts dried in ovens.

Pine seeds (Pinus pinea, P. cembra) 5 oz. sweet oil of good flavour, good to eat.

Almonds of stone fruits, plumbs, peaches, &c. 3 ounces.

Mustard seeds 3½ oz. yellow, sweet, odorous, good soap.

Laurus or Baytree berries 7½ ounces green oil, the seeds 1½ ounces of concrete greenish oil.

Hazlenuts 7½ ounces, sweet thin lemon oil.

Thus it will appear that in the United States we might make an immense quantity of oils, from the most oily substances common with us. Groundnuts, pumpkin seeds, sunflower seeds, hazlenuts, walnuts, beechnuts, &c. for all the needful purposes of salads, cooking, burning in lamps, soap making, &c. if industry was not palsied by ignorance.

Mr. Recluz has omitted the cotton seeds, which afford nearly 50 per cent. of good burning oil, and 80 per cent. when shelled. We might make millions of gallons of it in the south, and sell it to profit at 25 cents the gallon. His experiments on the Sesamum are at variance with those made elsewhere; our Benny seed has afforded 80 to 90 per cent. of oil, and keeps well many years.

His experiments on volatile oils, will be noticed hereafter. C. S. R.

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9. *Confirmation of the Important Discovery of the property of* SULPHUR IN TREES, *to destroy all Insects preying on them.*

Farmers and Gardeners ought to hail with rapture a safe, certain, easy and unfailing mode of driving away or destroying all the insects, bugs, caterpillars, lice, ants, which prey upon trees and often kill them.

Numberless have been the means proposed or devised to get rid of these troublesome guests, most of which are dirty, costly, or unavailing. Our farmers appear to have given up in despair the hope of preventing the deadly attacks of *curculios* on the roots of peach trees, and the fruits of the plumb tree. Yet an efficacious mode is said to have been found several years ago in France, perfectly efficacious and applicable to all cases and all trees. The man who discovered it, deserved a splendid reward, yet his name has not even reached us. But we claim the honor to have been the first to make known the process in America, in 1823 in Kentucky, and

in 1827 in Philadelphia. Yet the most useful knowledge is so slow to spread, that the fact is hardly known yet, or doubted by those who know of it.

We are happy to be able to publish two direct experiments in support of the fact and discovery.

First. We bored and plugged with sulphur in the usual way, a plumb tree which commonly dropped every year all the plumbs before becoming ripe, the *curculios* lodging eggs in their germs. This was done when the tree was in blossom. On that year hardly any fruit fell, and the tree produced quite well.

Second. We find in the Genesee Farmer of January 28, 1832, that a young willow nearly killed by aphis or lice, and pissmires feeding on their honey, was quite revived in three days, and all the lice and ants driven off, by boring the tree with an augur five feet from the ground and three-fourths through the diameter, filling with brimstone and plugging tight. The tree has thrived ever since.

The modus operandi of this singular process is very easy to explain. The vital energy of the tree and sap, dissolves the sulphur, carries it into circulation, and evolves it in sulphuric gas evaporating through all the pores of branches, leaves and fruits. This gas is a deadly poison to insects and all animals, it suffocates them or drives them away as soon as they begin to smell it; but no injury whatever results to the tree.

We have never heard yet of any direct experiment on peach trees; but we are sure it will answer quite as well. If the sulphuric emanation could not reach quick enough the roots of the trees which are commonly attacked: the plugging must be done near the root or at the time of the descending sap, when it will sooner reach the roots. Let it be tried and the results made known. C. S. R.

10. HORTICULTURE.

Melissa Officinalis, or Balm.

The above is the figure of one of our finest garden plants, both fragrant and useful. The *Common Balm* introduced from Europe; but growing also wild in Virginia and Kentucky, or a species very near it. Every body likes the fine smell of the *Melissa*. A few plants are found or ought to be found in every good garden. It grows with the utmost facility from seeds and in any soil. Being perennial it lasts many years without any care, not even requiring watering. The whole plant is scented and has a peculiar grateful strong smell between lemon and monarda: which is produced by the essential oil of the glands. This fine volatile oil may be obtained by distillation, but only one pound is produced by 800 pounds of the fresh plant. It swims on water and is colourless, but becomes yellow by age. The flowers are small, labiate, bluish white, blossoming in summer.

In medical properties this plant is similar to many of the labiate plants; being one of the most grateful it is often used, making a fragrant tea and pleasant distilled water, vehicle for many medicaments. The tea and water are gentle diffusible stimulants, antispasmodic, expectorant, pellent, resolvent, &c.; they are useful in all obstructions, hysterics, headache, piles, pleurisy, asthma, cholic, palsy, several fevers chiefly nervous, &c. Another beautiful native plant not uncommon in our gardens, the *Monarda Coccinea*, Scarlet Balm or Oswego tea, is an equivalent that may be used when the common balm is lacking; but although stronger in effects, it is not quite so grateful.

This plant grows one or two feet high, with square stem and branches. Leaves opposite petiolate ovate acute serrate. Flowers axillary in half whorls, pedunculate, with oblong bracts.

It is the moral emblem of Gratefulness. C. S. R.

Melissa, lovely nymph and grateful plant,
The garden sides and shady groves adorns,
Becoming floral emblem of delight
And feelings sweet by gratitude evolv'd;
Among the scented tribes of labiate blooms
The first perhaps: in modest sweetness clad,
Not dazzling colors nor gigantic size;
By gentle maids beloved and feeling hearts.

11. BOTANY.

Part of a letter from C. A. Agardh, *Professor of Botany at* Lund, *in Sweden, to Prof.* C. S. Rafinesque, *dated 26th June*, 1831. *Translated from the French.*

I have published, since 1825, besides many Memoirs inserted in the Literary Transactions, two pamphlets on a new theory of *Vegetable Physiology* in French, and the *Vegetable Organography* in Swedish and German. I am now publishing a *Vegetable Biology*, based upon this new theory. As soon as this shall be published, I mean to undertake the *Natural System*, on a plan more enlarged and correct than in my previous *Aphorisms*, and my *Classes Plantarum:* according to the new Physiological system, all will be considered in a different point of view.

My *Classes Plantarum* are but outlines: I have been far from deeming them perfect. I consider it a great honour and advantage to enter into correspondence with you, since you labour on the same subjects. I shall be glad to profit of your discoveries. But I cannot agree with you on the numerical accordance of classes in Animals and Plants. It appears difficult that the animals whose variable form depend on the medium of their existence, and their motions, food, &c. may agree with the classes of plants. But I suspend my judgment until I see your classification, when I shall communicate my remarks on it. I am also afraid that the positive characters can only belong to artificial groups of beings; natural groups can only have tendencies, since there are few immutable characters.

My new theory of Vegetation consists in proving that there are but two kinds or series of organs in plants:

1. Leaves or appendicular organs.
2. Buds or fulcrant organs.

But those two organs unfold themselves under six different forms:

1. Cotyledons and plumule.
2. Leaf and bud.
3. Bract and flower-bud.
4. Petal and stamen.
5. Carpophore and placenta.
6. Spermoderme and embryo.

Each of these pairs of organs form a degree of vegetation, or an age of it. Each flower that has several petals, or a divided corolla and calyx, consists of as many floscules. A decandrous flower only differs from a pentandrous, because the internal floscules or petals are sterile or without stamens. The application of this theory is immense. You will see it in my work. It would be well to translate my organography in English, that it may be examined and studied by the English Botanists, that do not read German.

Remarks by C. S. R.—The above

fragment on Botany is interesting; this new theory of Agardh is certainly an improvement on the actual belief of many eminent Botanists, that all the organs of vegetations are mere modified forms of the leaf, variously unfolded, separated, or soldered. Both, however, appear too systematical, and the roots, stems, fruits, &c. do not appear to be easily reducible to these notions. That positive characters do belong or ought to belong to each natural group of animals and plants, is to me as evident as day-light: the opposite opinion has been the great stumbling block to the beautiful natural method of Botany, and a great hindrance to its general adoption. Unless we admit this, there will be no line of demarkation between a man and a monkey, a dog and a cat, a rose and a blackberry, an oak and a chesnut tree.

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12. *Selection of twenty-four out of one hundred new species of Plants of North America, sent to Europe in* 1828, *by* C. S. Rafinesque.

1. *Anychia Polygonoides*, Raf. discovered, 1818. Stem dichotomous, lax, erect, puberulent; leaves patent, linear cuneate, acute, nearly smooth, stipules lanceolate; flowers solitary in dichotomy, subpedicellate, erect. From the mountains Alleghany, and estival like the three following, six inches high.

2. *Anychia fastigiata*, Raf. disc. 1820. Stem dwarfish, erect, puberulent, subdichotome, fastigiate; leaves adpressed, linear cuneate, acute; flowers crowded, fastigiate, secund, subsessile. From Kentucky, one or two inches.

3. *Anychia conferta*, Raf. disc. 1821. Stem erect, dichotome, puberulent; leaves linear cuneate, acute, serrulate; flowers crowded, fastigiate, bracteate, pedunculate. From knobs of Kentucky, annual, three or four inches.

4. *Anychia lateralis*, Raf. disc. 1821. Stem procumbent, dichotome, divaricate; leaves remote, short, linear cuneate, entire; branchlets unilateral; flowers sessile, lax or remote. Arid hills of Kentucky, one to three inches.

5. *Polygonum squamosum*, Raf. disc. 1818. Stem diffuse; leaves smooth, obtuse, linear longer than internodes; stipules scariose, acuminate, lacerate, elongate, equal to internodes; flowers solitary, axillary, sessile. From West Kentucky, annual, section octandrous, estival.

6. *Polygonum hyssopifolium*, Raf. disc. 1818. Stem erect, slender, ramose, striate; leaves lax, remote, linear, elongate, acute; stipules in cylindrical sheaths, end setose or ciliate; racemes filiform; flowers remote, often binate or ternate. Lower Ohio, annual? one foot. *S. G. Persicaria.*

7. *Urtica gracilis*, Raf. disc. 1818. Stem smooth, slender, yellowish, with four furrows; leaves opposite, remote and small, petiolate, lanceolate, trinervate, serrate, acuminate and smooth; capitules of flowers axillary, pedicellate, geminate, forming a whorl of four, shorter than petioles. From Kentucky, annual, estival, one or two feet high.

8. *Urtica verna*, Raf. disc. 1822. Differs from the last, by leaves ovate, acute, not acuminate; flowers axillary and subspicate; capitules nearly sessile, opposite. Kentucky, in woods: vernal, annual, one or two feet.

9. *Monarda rigida*, Raf. disc. 1818. Stem stiff, rough, hirsute; leaves sessile, ovate, nearly obtuse, stiff, ciliate, subserrate; capitule pedunculate, involucre pentaphyllous, lanceolate, ciliate, acute; as long as flowers; corolla smooth, apex of upper lip villose. In West Kentucky, hilly barrens, perennial, two or three feet high, flowers flesh coloured.

10. *Scutellaria radicata*, Raf. disc. 1818. Root annual, very long; stem small, ramose; leaves on long petioles, ovate, ciliate, obtuse, small, broadly serrate: flowers terminal, axillary, large, pubescent. On river Ohio, three to six inches, differs from

Sc. parviflora, by leaves petiolate and flowers four times as large.

11. *Scutellaria villosa*, Raf. disc. 1818. Stem erect, simple, hairy; leaves petiolate, ovate, obtuse, crenate, hairy; raceme bracteate, bracteas obovate, flowers opposite. Indiana and Kentucky, woods; flowers whitish, one foot high, estival, perennial? differs from *Sc. ovalifolia*, by leaves crenate and bracteas.

12. *Sarothra cuneifolia*, Raf. disc. 1821. Differs from *S. canadense* or *stricta*, (*Hypericum canadense*, L.) by leaves cuneate, linear, obtuse, lower obovate; flowers four times as large; calyx ovate; petals cuneate, twice as long as calyx. Kentucky, estival, one foot.

13. *Viburnum macrodon*, Raf. disc. 1818. Branches tetragone; leaves opposite, petiolate, smooth, but petiole and nerves pubescent, large round, base oblique, subcordate, margin with large teeth; cyme pedunculate, pubescent. Mountains Alleghany, shrub four feet high, vernal, white blossoms.

14. *Galium setaceum*, Raf. disc. 1818. Stem erect, diffuse, rough: leaves by six, cuneate, linear, mucronate, rough backwards on the edge: panicule lax, capillary: fruits smooth, pedunculate. Illinois, flowers white, near to *G. asprellum*.

15. *Eupatorium serratum*, Raf. disc. 1825. Stem erect, simple, rough, striate: leaves opposite, remote, sessile, rough, ovate, uninerve, acute, broadly serrate; corymb regular, pubescent; bracteoles linear; internal perianthe 5 phyllous, lanceolate, striate, 5 flore. On Potomack, Virginia, two feet high, flowers white, estival.

16. *Eupatorium pectinatum*, or *E. longipes*, Raf. disc. 1818. Stem erect, branched, striate, rough; leaves opposite on long petioles, ovate lanceolate, base abruptly acute end gradually acute, sharply serrate, trinerve smooth; corymb unequal, fastigiate; perianthe 8-10 flore, few scales, oblong, obtuse, hairy. On the Ohio river, three or four feet high, flowers greyish, estival.

17. *Eupatorium rupestre*, Raf. disc. 1821. Stems erect, simple, striate, white, villose; leaves opposite, sessile, lanceolate, acute at both ends, trinervate, rough, of a yellowish glaucous colour; corymb fastigiate, foliose; perianthe short, oblong, 5 flore; scales oblong, obtuse, pubescent, external ovate oblong. On the cliffs of the river Kentucky, one or two feet high, flowers whitish, estival. Near to *E. glaucescens* of Elliot.

18. *Aster hyssopifolius*, Raf. disc. 1818. Leaves sessile, adpressed, linear, acute, one nerved, entire, smooth; stem erect, pauciflore; flowers large, pedunculate; perianthe lax; scales cuneate, scariose at the base. In Illinois, one or two feet, flowers blue.

19. *Prenanthes rubida*, Raf. disc. 1822. Glabrous; stem striate, rubicund; radical leaves petiolate, lyrate; last lobe trilobe, unequally angular, angles mucronate; stem leaves sessile, lanceolate; flowers fasciculate, pendulous, red outside. Cumberland mountains and East Kentucky, two feet high, autumnal.

20. *Helianthus tenellus*, Raf. disc. 1822. Stem simple, uniflore, angular; leaves opposite, petiolate, ovate lanceolate, acuminate, remote, serrate, trinervate, tender, roughish; flower peduncle rough, perianthe lax, linear; rays few, elongate. Mountains, hills of East Kentucky, two or three feet high, flowers yellow, autumnal.

21. *Helianthus striatus*, Raf. disc. 1818. Stem erect, striate, pauciflore; leaves opposite or alternate, petiolate, lanceolate, acuminate, entire, above rough, with white dots, beneath subtomentose. Hills of Kentucky, two or three feet, flowers pale yellow, estival.

22. *Sisyrinchium albidum*, Raf. disc. 1822. Leaves striate, narrow, equal to scape; scape winged, wings striated, umbel multiflore, spathe

unequally 4 valved, pedicels erect; corols white, obcordate, mucronate; capsules globose. In West Kentucky, flowers vernal, scape four to six inches, slender; one valve of the spathe very long, rigid; three very small, scariose.

23. *Scirpus typhinus*, Raf. disc. 1804. Leafless; scape compressed, striated; spike terminal, cylindrical; scales ovate elliptic, obtuse, concave, smooth, rufous, with scariose margin. Pennsylvania hills, one or two feet.

24. *Scirpus nudus*, Raf. disc. 1804. Differs from the last by scape slender, not striate; spike small, elliptical; scales ovate, acute, scariose. Virginia, small, hardly a foot high.

Many other interesting plants were sent in this century, which may be noticed hereafter; such as

Lechea linifolia and paucifolia.
Juncus falcatus.
Neottia montana and gracilis.
Tradescantia rupestris.
Melanthium longifolium.
Collinsia purpurea.
Plantago gonophylla, &c. &c.

13. ZOOLOGY.

On the large wandering Tygers or Jaguars *of the United States.* By C. S. Rafinesque.

The Jaguars are the spotted Tygers of America, found from Mexico to Paraguay. It was supposed that none were ever seen further north or with us; they are hardly mentioned in our Zoological books, and their casual visits disbelieved by many when they hear of them. But Humboldt has lately ascertained that the striped Tyger of India, often wanders to the north as far as Tartary and Siberia. I will prove that the spotted Jaguars do the same in America, and wander as far as Kentucky and Lake Erie in latitude 42. This always happens in summer, and is not at all extraordinary, since our summers are as warm as in the tropics, and these carnivorous animals are known to range very far in search of prey.

Several instances of huge beasts having been seen in Louisiana, Arkanzas, and Kentucky could be collected by enquiries among old hunters. When seen at a distance only, they are commonly mistaken for large Panthers, our unspotted Couguar. When seen too near, the boldest hunters are afraid of them. When shot, nobody knows them, not even the Indians; and the skins are soldhigh at once for side-saddles. Sometimes the account gets into some newspaper, but is usually disbelieved or soon forgotten.

Harlan in his Fauna Americana only mentions that the Jaguar or *Felis onza* of the naturalists wander sometimes east of the Mississippi, which must be crossed by swimming. This animal comes as far north as Kentucky in lat. 38. While I was in Kentucky I heard of several having been seen and shot. Two of them, a male and female, did once make a stand near Russelville, and alarm many travellers, feeding on hogs, until a party of hunters went in pursuit of them, killed one, and drove away the other.

Before that another had been shot on the 6th of June, 1820, by Mr. John Six, on Green River, 10 miles south-east of Hartford, in Ohio county. The skin was brought to Frankfort and an account given in the papers. This animal appeared to be a true Mexican Jaguar. The body was 5 feet long and the tail 2 feet. It weighed 150 pounds before skinning. The back and sides were yellow with black spots curiously arranged in several rows, a row on the back much larger and extending over half of the tail, which was rather slender, with very long hair at the end. Chin, belly, and feet white, ears small round black outside, white inside. Whiskers stiff 6 inches long, black with the end white.

But another Jaguar still larger

and of a different species has lately been seen as far as Lake Erie, and lat. 42. One was shot by the Seneca Indians, to whom it was totally unknown, another was killed in the Alleghany mountainsof Pennsylvania, and an account given in the papers. These animals were totally distinct from the common Jaguar; they must have been wanderers from New Mexico or the Oregon mountains, and belong probably to a new species which I propose to call *Felis dorsalis*, owing to the black band on the back. There are several other species of Jaguars in South America, little known or not well distinguished.

Specific characters, Felis Dorsalis, Dorsal Jaguar. Of a grey colour, neck fallow, a black line or band all along the middle of the back, two rows of ringed spots on each side, black above, brown below. Total length 10 feet including the tail, body 6½, tail 3½. Very different from *Felis pardalis* by size four times larger, neck and back, &c.

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14. *On the North American Couguars.* By C. S. R.

The unspotted Tygers, or Lions without mane, of America have been called Couguars from the Guarani name, or Puma the Peruvian name. There are several varieties of them in North and South America, not well known as yet; in South America they are red or black, which perhaps indicate different species. In North America, fallow or grey. All these are called *Felis concolor* by the zoologists and deemed identic. This may be doubted; we know too little of these animals to decide; as they are becoming scarce it is needful to preserve the knowledge of those yet extant. The following are on record or have fallen under my notice. They are called *Panther*, *Painter*, and *Catamount* in the United States. They winter with us.

1. Var. Yellowish, 8½ feet long. In Carolina. Dr. Mease.

2. Var. Entirely grey. Green mountains. Dr. Morse.

3. Var. Fallow; outside of the ears, feet and end of the tail black. Body four feet, tail nearly three. Seen in Kentucky.

4. Var. Back nearly black, sides dark reddish brown, feet black, body six feet, tail three feet, legs very short, only one foot long. In New Hampshire. Dr. Moose.

5. Var. Differ from the last by body five and a half feet, tail two and a half feet, feet twenty to twenty-two inches long, called Pennsylvania Couguar by Buffon. Alleghany mountains. These two last appear to deviate much from the species.

The Couguars being spread from Canada to Chili, or 90 degrees of latitude, must vary in their fur. Every traveller gives a different account of them, or calls their fur by a different name, black, brown, red, rusty, fallow, sallow, yellow, grey, &c. They may yet belong all to a single species; but these varieties or deviations must be noticed, as they are in man, the dog, the sheep, and other deviating animals.

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15. *Extracts from A Second Series of Zoological Letters written to* Baron Cuvier *of Paris, by Prof.* Rafinesque *in* 1831.

Extracts from letter 1, *March*, 1831.—I sent in 1821 to Paris, a memoir on fifteen Trilobites of North America, and published in Lexington the new *G. Isoctomesa* of that family, which Dr. Dekay has since erroneously called *Octomeris;* there is a *G. Octomeris*, already among shells; my Sp. was however different from his, being emarginated behind, and one of the largest Trilobite known, being nine inches long. It was preserved in the Cabinet of the University. There are also some very small Trilobites nearly like the Entomostraceous; such is my *Anopsites*

urocera, without eyes, of which I send you the figure.

I have found in Lake Erie, in 1826, two N. G. very near to the Trilobites, both lacustral living animals: both without antens and with concealed feet. I call them *Peltoma* with two eyes, and *Adelopus* without eyes. I send you the figures. Also the description and figure of another living sea N. G. from the atlantic shore between *Idotea* and my *Gonotus* of 1814. I call it *Mesotropis albipes*. Body oblong, back carinated, small head, no eyes, fourteen feet, tail with many articles and ciliated, two antens, *Sp. Car.* greenish-brown, both ends obtuse, antens equal to body and tail, feet white.

I send you the figure and description of a singular atlantic small sea shell, *Nemalix pelagica*, which suspends itself by a thread from the *Fucus natans* in the middle of the ocean, discovered 1815.

I send you, as you request, the figure, description, and a specimen of my *Trinectes Scabra*, a new G. of fish near to *Achirus* found in the river Schuylkill; it has only three fins, dorsal, anal and caudal. Also the description and figure of a large and beautiful new catfish from the river Tennessee discovered in 1823, *Pimelodus lutescens:* it was three feet long, excellent to eat, of a olivaceous yellow colour, belly white, jaws equal, eyes round, tail forked, first dorsal falciform, second dorsal nearly as large as the anal.

Extracts from letter 2, April, 1831. I send you the figure and description of two subterranean worms. The first *Ophelmis rugosa*, is near to *Gordius*, but dwells under ground like *Lumbricus*. It was found in New York six feet under ground in 1817, and was preserved in a museum. It was a gigantic worm, almost like a snake, three feet long. *Gen. C.* body fistular compressed, leathery, without viscera, not annulated but wrinkled diagonally on the sides. Tail trilobe, vent oblong inferior, lateral lobes short obtuse, middle lobe long cylindrical. *Spec. C.* fulvescent, wrinkles equal in length but not in depth, inside smooth filled with a yellowish liquid.

The second *Geonema gordinea*, was a subterranian Gordius found two feet under ground in Connecticut, with body filiform, fistular, filled with a fluid, elastic, the two ends equal attenuated, opening, hardly visible, *Spec. Description.* Flexuose fulvescent, both ends obtuse only four inches long.

Another akin N. G. but aquatic like *Gordius*, was found by me in a spring near the river Hudson in 1816. It differs from *Gordius* by body hardly fistular, head split or bilobe and tail simple. I call it *Cephachisma diphaia.* Length eight inches, size of a violin string, dark brown above, fulvous brown beneath, head clavate bilobe, tail obtuse black, with a white tip.

I have perhaps been the first [illegible]alist, who has observed and studied the microscopical animals of infusions, swamps, pools, creeks, rivers, lakes, and the ocean, in America, and chiefly in Kentucky, as I once did in Sicily and the Mediterranean. This is quite a new world of animated beings, fecund and inexhausible. They swarm every where and are from a size so minute as not to be seen without a large magnifying power, sometimes one thousand times smaller than a grain of sand, up to a size visible to the naked eye, and even reaching a gigantic size, in the ocean; where I have seen some a foot long, although quite identic with the most minute, being in common always destitute of mouths, and therefore living by absorbing their nourishment by the minute pores of the body: whereby they belong to the peculiar class or division of animals nearest to plants, and merely differing by their spontaneous motions, which I called Porostomes as early as 1814 in my

Somiology, and illustrated in my Analysis of Nature in 1815. This name is very good, but if not agreeable to all, I have half a dozen others to offer as substitutes: *Biopores*, or *Zoopores*, or *Leptremes*, or *Adelostomes*, &c. Because it is my wish that this class or large section of animals should bear a good name given by me, instead of the delusory one of *Animalcula* or *microscopic animals*, which does not apply to all.

Besides it is very probable that many other, if not all the animals without mouths, must belong to this class; such as the mouthless Meduses, the Tethya, Alcyons and Spunges; perhaps some *Oscillatoria* and *Conferves*. These porostome animals are generally aquatic and floating: but there are some fixed ones also. Others are parasitical (like many worms) living in other animals. Some may be terrestrial like the *Geonema* above. The *Miasmata* or miasmic animalcula of the air, may be the invisible birds of this class, or aerial insects floating in the air. This may appear a bold surmise, but it is not preposterous; they have hardly been seen yet, but are perfectly well indicated already.

Lastly, there are also fossil animals of this class. They must have existed abundantly in the primitive earth; and some of those with a cartilaginous or leathery body have been fossilized. My fine N. G. *Trianisites* of 1818 may be one, also my N. G. *Bolactites*, *Geodites*, *Granulites*, *Tractinites*, &c. discovered in the oldest geological strata of Kentucky, and united protem to the Alcyonites. Some may also have been akin to the actual *Nullipores* of the sea, which are real stony plants and not animals: having no motion whatever, being fixed, without mouths nor viscera; no polyps about them: a mere vegetative concretion of the sea with minute pores. Some naturalists even deem them a kind of marine stalagmites. We may well wonder how Lamark put them among animals. It was probably like the Porostomes, Corallines, and Spunges upon a mere surmise of animality. But I defy any naturalist to perceive any motion in them, or to find out their polyps or mouths.

I send you the figures and descriptions of ten N. G. of aquatic porostomes, which will demonstrate the variety of size and form. I described besides as early as 1814 the gigantic *Aproctomus* of Sicily, and in 1825 the large *Scalenium* of the ocean.

1. *Stigoma tripunctata.* Ocean, one inch, cuneate flat, head obliquely bilobe, tail mucronate, three dots on the back.

2. *Lobuloma inequalis.* Ocean, one line, flat with six unequal lobes on the margin.

3. *Thalanema capitata.* Ocean, two inches, filiform flexuose like *Vibrio*, but one end enlarged oboval obtuse.

4. *Zoocoilon levis.* Sicily, half inch, subglobular, truncate, with a large cavity occupying the whole inside.

5. *Polasmus pectinatus.* Sicily, one inch, oblong lamellar or pectinate beneath transversally.

6. *Diplepha gibbosa.* Lake Erie, half line, oblong sinuose, gibbose, two pairs of geminate bristles, a fifth at one end.

7. *Disynema isella.* Kentucky, pools, microscopic. Two threads united at both ends, like a conferva, but with free motion.

8. *Blobula varians.* Kentucky, infusory. Oblong sinuate, one end with five bristles, the other with one.

9. *Pecticoma paradoxa.* Kent. infus. oblong sinuate, ciliated beneath, bristles unequal three longest, one in the middle and another at each end.

10. *Loncoma incurva.* Kent. infus. oblong compressed shaped like a curved knife, the two ends acute, one raised up, no organs.

I send you also the figures and descriptions of five new fishes No. 3 to 7. *Zonipus punctatus, Semotilus notatus, Lepemiurus fasciolatus* and *bilineatus, Luxilus auratilus* and *Zonargyra virescens.* All observed in the waters of Kentucky since publishing my Ichthyology of the Ohio in 1820, except the *Lepemiurus.*

To be Continued.

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16. *Description of the Spelerpes or Salamander of the caves of Kentucky. By* C. S. Rafinesque.

In 1821 I discovered a new Salamander, dwelling permanently in the dark caves of limestone near Lexington. It never comes out to the light, being found there in summer. Its eyes are calculated for this life: they are large elliptical, with a large black pupil like the cats to shade them from the least access of light. It is called *Cave Puppet* in Kentucky, while the other Salamanders are named Ground Puppets. Several specimens were preserved in the Museum of the Lexington University, presented by Dr. Crockatt.

It appears to form a peculiar N. G. or S. G. among the Salamanders, which I call *Spelerpes*, meaning *Cave reptile.* Head round, broad and flat;mouth very large,split to the neck, jaws with small teeth, obtuse in the upper jaw, acute in the lower. Feet semi-palmated, anterior with four toes, hinder with five toes. Tail cylindrical, slightly compressed at the base. Eyes oblong with a pupil.

Spelerpes lucifuga. Entirely orange colour, covered with small oblong black dots all over, jaws equal. Tail very long, five eighths of whole length, which is from four to six inches.

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17. GEOLOGY AND HISTORY. *History of China before the flood.* By C. S. Rafinesque.

The traditions presented by many ancient nations of the earliest history of the earth and mankind, before and after the great geological floods, which have desolated the globe, are highly interesting; they belong at once to geology, archeoloy, history and many other sciences. They are the only glimpse to guide us where the fossil remains or medals of nature are silent or unknown.

Ancient China was in the eastern slopes and branches of the mountains of Central Asia, the hoary Imalaya, where it is as yet very doubtful whether the flood thoroughly extended. The traditional history of China speaks of two great floods, which desolated but did not overwhelm the land. They answer to the two floods of Noah and Peleg recorded in the Bible, which happened towards 3170, and 2357 before our era, and have often been erroneously blended into one by several historians. The second or flood of Peleg, or Yao in China, was caused by volcanic paroxysms all over the earth, and much less fatal than the first of Noah, or Yn-ti in China.

The following details are taken chiefly from the Chinese historians *Lo-pi* and *Liu-ju*, whose works are called *Y-tse* and *Uai-ki*, as partly translated by Leroux. Due allowance must be made for the allegorical and amplifying traditions; but truth may be sifted from them. The Chinese have few fables in their history; they deal in facts rather than fictions.

The first flood of China happened under the 8th KI or period called *Yn-ti*, and the first emperor of it, *Chin-sang* about 3170 years before Christ, or 5002 years ago. The waters overflowed the land, and did not return to their usual channels for a long while; the misery of mankind was extreme, the beasts and serpents were very numerous, the storms and cold had increased with heavy rains. *Chin-sang* collected the wandering men, taught them to unite to kill the beasts, dress their

skins for clothing, and to weave their fur into webs and caps. He was venerated for these benefits, and began a SHI or dynasty that lasted 350 years, or perhaps reigned 350 moons, equal to 27 years.

The two words KI and SHI, translated Period, and Dynasty or family, are of some importance; they may have other collateral meanings, and require a philological examination. As they now stand translated, they would make the world very old; since no less than 10 KI or periods are enumerated (we are in the 10th) wherein 232 SHI or dynasties of Emperors are said to have ruled in China, during a course of 276,480 years before Christ, at the lowest computation, or 96,962,220 years before Christ, at the highest, with many intermediary calculations by various authors. But if KI may also mean a dynasty or division or people, as it appears to do in some instances, and SHI an age, or a tribe, or a reign; the whole preposterous computations will fall, or be easily reducible, so as to agree with those of the Hindus, Persians and Egyptians.

There are now three principal religions in China, each having peculiar notions on the Creation, and early history, &c. as every religion elsewhere. 1. The *Ju-kiu*, religion of the learned and worship of ancestors. 2. *Tao-kiu*, or worship of spirits, a kind of Shamanism. 3. *Fo-kiu*, or the worship of FO, a kind of Budhism. All the diversity of opinions on those subjects found in various Chinese books, are owing to this. The various opinions and their concordance has never been properly attempted; yet it must be remembered that these three religions are in fact mere branches of the primitive religion of China, the TAN religion or worship of Heaven upon hills as altars, of which the emperors were pontiffs; somewhat like Judaism, Christianity and Mahometanism are in the western regions, the three branches of the primitive religion of Adam, Noah, and the Patriarchs.

Chao-kang-tse, of the JU religion, has established that the world is to last 129,600 years, or a period called *Yuen*, composed of 12 equal parts of 10,800 years called *Hoei* or conjunctions, of which the half or 64,800 years were elapsed at Yao towards 2357 years before Christ.

In the first Hoei, the Tai-ki or Supreme Being formed the Heavens by degrees, and by giving a motion to chaotic matter. In the second Hoei, the earth was produced in the same manner. Men and animals in the third, &c. The 10 last Hoei answering to the 10 KI, but in a different chronology.

Lopi and the most learned historians place at the beginning of things *Hoen-cun*, or the chaos, and *Puan-cu*, meaning remote antiquity. After which begin the three first KI, which are collectively called *San-hoang*, and commonly put down as successive periods or dynasties; but there are in my opinion many intrinsic proofs that they were contemporary. The principal is that they are sometimes called SHI as well as KI.

1. *Tien-hoang*, meaning Celestial Emperors, the very title yet of the emperors of China. They must have been the real primitive rulers of mankind in Thibet and Western China on the mountains: where the early history of the Hindus places a race of Heavenly kings, and the land itself was called Heavenly or Celestial. The rulers had many other titles, *Tien-ling* or Celestial Intelligence, *Chong-tien-hoang-kun* meaning Middle-Heaven-Emperor-Supreme, &c. To them is ascribed the discovery of pictured letters and books, with the rudiments of Astronomy. The 18000 years of their ascribed duration, may safely be reduced to 1384 years, by reckoning each year for a moon, as moons were the only primitive years, every where.

2. *Ti-hoang* meaning Earthly

Emperors, lasted also 18000 years or moons, 1584 of our years: which is an additional proof of contemporary duration. They are said to have been sons of the Celestial Emperors, and fathers of the next KI, all of which are sometimes personified. They must have been the primitive rulers of the Lowlands which were called Earth in opposition to the Celestial Mountains. To them is ascribed the discovery of the solar year of 12 months of 30 days, making the year of 360 days, as it was before the flood.

3. *Gin-hoang* meaning Human Emperors were nine brothers, sons of the Ti-hoang, who divided the earth among them, and built cities surrounded with walls, founded kingdoms and settled governments, becoming despotic rulers, while before or among the other two KI, the rulers were only patriarchs. Their duration is extended to 45,606 years, which if reduced to moons, would be only 3508 years. These GIN or men appear to be the *Jins* or *Genis* of the primitive Arabs and Persians, who came in contact with them in East Imalaya and Iran, famous in antediluvian history as good and beneficent beings, friends of the Peris, the ancient Iranians or Persians.

That these TIEN, TI and GIN were not KI periods, but rather SHI or families of mankind, is evident by no Dynasties being numbered among them. They are often collectively made a KI named *San-hoang;* but then the *U-long* form the second KI, while the third has no name and therefore no existence. I rather consider them as the three first KI, either implying three periods, or three divisions of mankind. And I find a fourth division in the U-LONG (sometimes deemed a fourth period) meaning *Black Monsters or Dragons*, a metaphorical name for the primitive Negroes of Asia, born in the sandy and sultry regions of Asia, from the GIN of whom they are deemed sons and successors. These *U-long* had five families or divisions, they were barbarians, dwelling in caves and on trees. This could not be if they had been successors of the civilized GIN.

Of the fourth, fifth, and sixth KI very little is said. Lopi ascribes 90,000 years duration to them including the *U-long*, which if reduced to moons, would still amount to 6923 years, a very long period; but it is very probable that they were partly contemporary with the *San-hoang*, and some of the barbarous branches of mankind, since they dwelt in caves, rather than towns. Their names were

4*th*. *Ho-lo*, formed of three families or tribes: (are they the ancestors of the *Lolo* tribes of south-west mountains of China?)

5*th*. *Lien-tong*, six families or tribes.

6*th*. *Su-ming*, four families or tribes.

The signification of their names which is most given, would perhaps trace their connection with other Asiatic Nations. The last resembles the Samangs and Shamans of Asia.

The seventh KI is called *Sun-fei*, and had twenty-two families or tribes, of which hardly any thing is related, except that under the last SHI or family *Tse-she*, men were more civilized, but a flood happened which began the eighth period of *Yn-ti* as stated above.

After this flood, the history of China assumes a different form, and the names of the families, tribes or dynasties are given. The subject shall not be now pursued any further; the antediluvian history of China alone is here to be illustrated. It becomes very prolix as we advance. It has been sufficient to show and prove that the Chinese have traditions of the state of the earth before the flood, as known to them in Eastern Asia, that the Asiatic Negroes were antediluvians, and that the deluge of Yao, is not

that of Noah as generally supposed, which to support still more, the SHI between *Ynti* and *Yao* are given.

The eighth KI or *Yn-ti* had thirteen SHI or families, all named in history with some details, which I only deem as many Emperors.

The ninth was *Shen-tong* with twenty-one SHI, which here turn out to be 21 Emperors instead of families! A convincing proof that the previous ones in more obscure times were such also. Here details abound likewise.

The tenth KI or actual period, opens with the three *Hoang* or August Emperors,called *Fuhi,Shin-nong*, and *Hoang-ti:* to whom great improvements, discoveries, and acts are ascribed. Fuhi has been very gratuitously taken for Noah, by some prejudiced historians, although no flood happened in his time, and thirty-five Emperors reigned between the flood and him: because with him some writers begin the regular history of China.

After the three Hoang, came the *U-ti* or five elective Emperors, of which Yao is the fourth, in whose time the flood of Peleg, which convulsed the whole globe, was felt in China during nine years in dreadful inundations, towards 2357 before our Era. In 2207 began the Hia dynasty, the first regular historical family. Much obscurity is found previously, the five Emperors were really six, one being soon deposed is often omitted. The three Augusts had each a dynasty often omitted, the head being only reckoned.

Fuhi had fifteen successors reigning altogether 115 years.

Shin-nong had seven, dynasty lasted 140 years.

Hoangti dynasty lasted 100 years.

Many other floods are mentioned since in Chinese history, as many as sixty-five; but they were all local and did not extend over the whole of China, although that of 185 before Christ was dreadful, and this or another formed the Yellow sea by overwhelming all the land between Corea and China.

The state of mankind before the flood of Ynti (or Noah, which agrees in time with the seventy computation) is represented as happy. China, called *Tien-hia* or Celestial Region, (universe) was ruled by benevolent monarchs who took nothing and gave much; all the world submitted to their virtues and good laws. They wore no crown, but long hair; never made war and put no one to death. Harmony even reigned between men and animals; men lived on roots, fruits and cattle, they did not follow hunting, property was in common, and universal concord prevailed. They did not therefore deserve the punishment of total destruction by a flood.

This interesting and important part of the early history of mankind, is not yet inserted in the would-be universal histories of the western Barbarians, as the Chinese call us. Our compilers for ages appear intent on destroying the little remnant of ancient historical knowledge as yet extant. Let it be revived.

I conclude by 3 remarks, 1 Geological, 2 Chronological, 3 Philological.

1. The Chinese account of the flood confirms the geological fact that the flood was attended with a change in the year from 360 to 365 days, with a change in the seasons, increase of cold, winds and rains. The increase of cold hitherto surmised, and in which I did hardly believe, is very important for the antediluvian Zoology and Botany. The increase of wild beasts, who had probably taken refuge in the mountains against the flood, is also important. It shows how animals were preserved as well as men, and does not militate against the Mosaic account, since the word translated ARK in the Bible is THEBA, which means refuge, and is preserved in Thibet.

2. Another Chinese book of chronology, *Li-ta*, followed by Morison, puts *Fuhi*, the founder of the Chinese Empire in 3369 years before Christ, this would change the whole series and does not co-ordinate well with Yao, Peleg and the Bible. But the Chinese have various Chronological systems as we have. As many as 70 have been based upon the Bible, reckoning from 4000 to 6600 years from Adam to Jesus Christ.

3. My orthography of the Chinese is the plainest and shortest I could use, based upon the Latin and Italian, except that SH is like English and CH also as in *Church*. The Chinese have the French U which I have expressed by UH. The word U (or OO in English) means Black and Five in old Chinese. The Negroes and the kingdom of U or the Blacks, have existed in South China till 280 before Christ, when they were conquered. It is said that there are even some wild negroes yet in the Mountains of Kuenlun, probably similar to the Samangs of Malaca.

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18. *Early Colonization from China by Sea.*

Towards the year 2670 before Christ, or 4502 ago under the Emperor *Hoangti*, ships were invented and built in China, by *Kongku* and *Hoa-huh*, by orders from the Emperor, with hollow trees and furnished with oars. They were sent to discover places beyond sea, hitherto inaccessible and where no man had ever been. Thus the first Chinese Colonies were established in many islands. The magnetic needle had already been invented under *Shin-nong* about 130 years before, or about 2800 years before Christ.

In 2037 before Chirst, under the Hia dynasty, embassies were sent to China from foreign countries beyond the sea; they came in ships to pay homage to the *Hias*.

In 1197 before Christ, under the *Yu* dynasty a branch of the *Shang*, a large colony was sent from China to Japan and other Western islands, from whence they drove the ONI or black devils (negroes) first inhabitants of Japan.

The exact time when the Chinese discovered or reached America is not given; but it was known to them and the Japanese at a very early period, called by them FU-SHAN, and frequented for trade.

These extracts from Chinese history, throw some light over the early history of Polynesia and America, without proving that the real Chinese ever settled in America, where there language is not found. But the Japanese and Luchus, evident children of old China, speak very different languages. China had formerly and has yet many dialects. The ancient *Gins* and *Tienhias* of China before the flood, and the *Hias* and *Shangs* since, may have come and partly colonized America. C. S. R.

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19. SCIENTIFIC EXPLORERS IN AMERICA AND AFRICA.

America.—Mr. Audubon is now engaged in exploring the Peninsula of Florida, for birds, and to collect animals, as well as all other kinds of natural objects. He has two assistants with him.

Mr. Drummond, the botanist, has been exploring the Oregon mountains for two years past, chiefly for plants and seeds. He was sent by some English botanists and gardeners. It is said that he took to St. Louis two tons of paper for preserving plants.

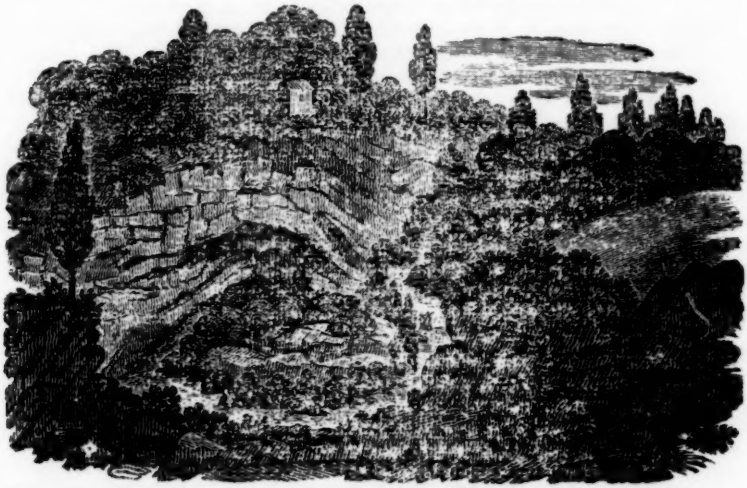
Mr. Peale is just returned from his voyage to South America, and travels in 1831 up the R. Magdalena to Bogota. He has brought a fine Zoological collection for the Philadelphia Museum, among which are 500 birds and 50 quadrupeds, which were not there. It is expected that he will publish an account of his zoological travels and discoveries. He asserts the very singular fact that the R. Magdalena has no shells and but few fishes.

Africa.—The mouth of the Niger or Quorra has at last been found by Lander to be as was surmised in the large Delta of Benin, 250 miles broad, and the R. Nun the main mouth. The bookseller Murray has paid him 1000 guineas for the Journal of his travels.

Douville, a French traveller, has explored Congo and reached inland to the N. E. as far as the lat. 4 d. south of the equator. He is just returned to Paris where he will publish his discoveries.

20. GEOLOGY.

ENTRANCE OF THE MAMMOTH CAVE OF KENTUCKY.



The Caves of Kentucky. By C. S. RAFINESQUE.

Among the various and curious geological phenomena of Kentucky, the numerous Caves of that region are not the least interesting. They have attracted long ago the attention of travellers and Geographers; but I was the first to examine them geologically and zoologically, from 1818 to 1826.

In the last war, between 1812 and 1815, they became of some importance by affording a good deal of Saltpetre by lixiviation of their soil. But all did not afford it, some contained a mere stone floor, or stalagmites, or a diluvial clay.

Their number is unknown, being too many for enumeration; perhaps fifteen hundred or more; of all sizes from ten yards to ten miles in extent. They are found chiefly in the limestone region or the calcareous strata; but the greatest number is situated in the central hilly region of Kentucky, where the limestone is covered by sandstone and slate hills; being however found in the lime below, visible in valleys: seldom in the sandstone itself. They extend through the three kinds of limestone, the Cherty, the Specular, and the Compact, chiefly this last. These limestones being of the oldest secondary or organic formation, called transition by some Geologists; but perfectly horizontal without any visible dip for 100 miles.

These various Caves are of seven different kinds, which I call

1. *Cliff Caves*, commonly called *Rock Castles or Rock Houses* in Kentucky. They are merely natural excavations in the cliffs of rivers, somewhat like chambers, always small, without stalactites, nor saltpetre. Common in East Kentucky, and on Rock-castle river, which takes its name from them. Not uncommon in sandstone and freestone.

2. *Fissure Caves*, found chiefly in the slaty or shaly claystone and coal region, being horizontal or vertical fissures in the strata, often without any communication with the outside. Rather rare, often concealed.

3. *Sinking Caves.* The outlets of the numerous Sinking Creeks,

being subterranean channels of creeks and streams, which after a course of 100 yards to one or more miles disappear in them. They chiefly differ from the last by having waters. Commonly inaccessible, being filled by the water. Very common, chiefly in West Kentucky, in the open glades called barrens of the sandstone table land.

4. *Spring Caves.* Giving rise to a stream which issues from them, either to join another stream, or sink in the Sinking caves. Only a modification of the last; but less common, sometimes quite accessible, forming vast caverns with a vaulted roof. Chiefly in the limestone regions.

5. *Crater or Funnel Caves.* Only in the limestone regions, very common, formed by circular or elliptical hollows, called *Sinks* in Kentucky, from twenty yards to one mile in circuit, and from five to fifty feet deep. Sides sloping inside, similar to the craters of volcanos, but more of a funnel shape, with a vent hole at the bottom, leading to a fissure, spring or cave. When this hole is choked up by earth, the basin fills with water and forms a pond. The sinks are, according to my eruptive theory of the limestone and clay formations, the springs, craters, or spouts from whence issued in the sea, that limy mud which spread horizontally, imbedding the fossils.

6. *Saltpetre Caves.* Large cavities with galleries and chambers, roof commonly flat, floor with a rich nitrous diluvial loam, commonly in the limestone. The largest of all is the *Mammoth Cave*, the entrance to which is figured above, and an account follows beneath. It is in these that bones of antediluvial quadrupeds have been found. Many were discovered while digging for saltpetre, but being often crumbling were lost, the best were scattered or thrown away, except a few collected by Mr. John D. Clifford and others.

The principal fossil bones found in them, and come to my knowledge, belonged to

1. The *Megatherium*, or an animal very near it.

2. My *Aulaxodon speleum*, since called *Megalonyx laqueatus*, by Harlan.

3. A kind of *Taurus*, either the Buffalo, or *T. latifrons*.

4. A small animal like a Polecat.

5. A smaller one yet, perhaps a *Sorex*.

The animals still living, or rather wintering in those caves, where the temperature is very mild and equal, are bats and rats of many species, and my subterranean Salamander, *Spelerpes lucifuga*, which is permanent there.

There also have been found a few ancient mummies, not antediluvian, but buried in the diluvium, and quite preserved by the antiseptic nitrous soil; they are not numerous, rather accidental than otherwise.

7. The seventh and last kind of caves, are the *Stalactical* Caves, similar to those of Europe, filled with stalactites and pillars, as well as stalagmites rising from the ground. Rather uncommon and always in the limestone.

To give a tolerable idea of these caves, I shall describe some of them, out of several series.

Jenning's Spring and *Lovedale* are two sinking caves of the 3d and 4th Series, between Frankford and Lexington; both in the limestone and shaped like an excavated bow, with a large spring at one end and a sink at the other. Jenning's spring turns a mill, the excavation is 150 yards long, 3 to 6 wide, and only 2 or 3 deep. Lovedale could also turn a mill, but has none. It is rather a chasm, 200 yards long, 10 wide, and 10 deep.

Elkhorn Cave belongs to the 4th Series; it is in the cliffs of Elkhorn creek north of Lexington, like a fine hall, with smooth limestone walls, accessible for 100 yards and more, about 10 yards wide and high. A

fine stream issues from it, quite perennial and emptying into the Elkhorn about 60 yards from the cave.

Deer Lake belongs to the 5th Series. It is one of the largest natural ponds of Kentucky, where being rare, it is deemed a lake. Somewhat circular, nearly two miles in circuit, constantly filled with water, without any outlet. It is between Green River and Glasgow, at the entrance of the Cumberland limestone region, where smaller sinks and ponds are common; evidently one of them, filled up by water.

Crawford's Little Cave, one mile from Mount Vernon in the sandstone region, is 200 yards long, full of beautiful stalactites.

White Cave, near the Mammoth Cave, is another with handsome white stalagmites of many shapes on the floor. It was not there, as stated erroneously by Harlan, that the *Aulaxodon* was found, but in the *Mummy Cave* near it; a saltpetre cave, where 3 mummies were also discovered.

Bryan's Cave, near Lexington, is a small dry cave, in limestone, with a small spring at the entrance. It is like a crooked gallery, 380 steps long, 6 to 10 feet high and wide, with an even floor and roof. It is used by Mr. Bryan as a spring house. It had hardly any diluvial matter, but has a vent or air hole.

Big Cave, in Rockcastle county, nine miles east of Mount Vernon, on Crooked Creek, is a fine saltpetre cave, 700 yards long, surface about 12½ acres, divided in many rooms and branches. Breadth and height from 5 to 40 feet. There is a spring in it without outlet, but no stalactites. As much as 1000 lb. of saltpetre was made there in one single day.

Mammoth Cave. The largest saltpetre cave in Kentucky, near the south side of Green River, in the sandstone hills; but quite in the limestone beneath. Entrance in a cleft or chasm, very picturesque, of which a figure is here given, drawn by myself. I also made a correct map of it as far as I went, which is very different from those popular *catch-penny maps* already published. In fact, all the popular accounts of this cave, inserted in the ephemeral press, are quite false, exaggerated, or fabulous. Such is that copied in the Saturday Evening Post against my consent, with my figure. The best account is that given by Farnham in the Archeologia Americana; yet it is also lame and imperfect. It has many branches, all in the gallery form, with a flat roof, but very uneven floor, ascending and descending, with many fallen stones forming sometimes hills. The branches are crooked, like a labyrinth, sometimes descending under each other, with springs and a few stalactical pillars. Fanciful names have been given to these branches, galleries, called rooms and halls when expanding. The whole length is yet unknown, being very difficult to penetrate after 5 or 6 miles, but 9 to 10 miles have been reached, and are supposed to extend under the bed of Green River, which I doubt, as the whole cave appears to have been once the subterranean bed of a stream, which emptied into Green River, not far from the entrance, where the chasm leads and reaches the river. Much saltpetre was made here between 1814 and 1816; vats, oxen, and negroes employed, as in a manufacture; 25 miles of extent in branches were explored to seek for the nitrous earth; no bones and no mummies were found there. The sides of the galleries are commonly smooth and of compact limestone, incrusted with efflorescence, native nitre, glauber salts, yellow ochre, calcareous incrustations, &c. in various places. They cover the few fossils of the strata, yet I observed some Madrepores, a fine *Mastrema*, and a *Turbinolite*. In a room, a kind of black flint or rather chert is found, indicating the cherty limestone.

The temperature of this cave is

permanent, at about 56 degrees; therefore cold in summer and warm in winter. It is the wintering quarter of thousands of bats of five new species of mine which resort to it in winter only from 100 miles around: and remain suspended to the roof in a half sleepy or torpid state. Each species appears to occupy a gallery or room by itself. Large rats dwell there also in winter and feed on the bats they can catch or who fall; no snakes dwell there. In coming out of it in summer after an exploration, the outside air appears as sultry as an oven, and in winter so cold as to chill and be dangerous for the health, by the sudden change.

This cave upon the whole appears very similar to one of Siberia described by Gmelin. The roof is flat and lofty throughout.

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21. *Geological Strata of Ohio and Kentucky. By* C. S. R.

The following are the series of Geological formations extending from Lake Erie in lat. 42° to Tennessee in lat. 36½° through Ohio, Indiana and Kentucky, chiefly extracted from my Geology and Oryctology of Ohio and Kentucky. They are, as well as the Physical geography of these large states, almost unknown. The maps and accounts of Maclure and James are quite erroneous.

The series begin at the deepest or lowest formation and strata nearly at the level of the sea, up to the highest in the Cumberland mountain about 1700 feet above the sea. But the tertiary formation or latest do not rise so high. They are all horizontal or nearly so, belonging to the Floetz formations of Werner. They all contain more or less fossil remains of the most ancient order, including Alcyonites, Corals, and Trilobites, of 1000 new G. or N. Sp. mostly different from those of Europe and the Atlantic states.

Primitive boulders are only found thinly scattered through Ohio as far south as lat. 39°. I never saw a single one in Kentucky, but many gritty and limy angular boulders in some places.

Successive Series, by Age.

1. Lowest series of formations—Limestone.
   1. Compact L. Grey chiefly.
   2. Specular, blue.
   3. Golitic, white.
   4. Shaly.
   5. Cherty.

2d Series. Carbonic.
   1. Clay slate.
   2. Bituminous coal.
   3. Foliated slate.

3d Series. Grit (*Gres* of the French.)
   1. Pebble stone.
   2. Freestone.
   3. Gritstone, highest stratum.
   4. Sandstone, brown chiefly.
   5. Iron stone.

4th Series. Clay.
   1. Ferruginous clay.
   2. Saliferous clay.
   3. Marly clay.
   4. Potters' clay.
   5. Common clay.

5th Series. Alluvial.
   1. Diluvium.
   2. Alluvion.

But these formations do not always occur together; many are often lacking. When present the above is their respective position or most general succession of superincumbence. However there are many anomalies of position in various places, which baffle all the actual fanciful systems of Geology; but find a very easy solution in my natural theory.

For instance, beds of coal are sometimes found between the strata or beds of limestone! instead of slate. Elsewhere between sandstone above the slate. Large beds of limestone have often strata of clay from 1 to 6 inches thick between each stratum of limestone, either marly or saliferous clay. Thus the coal and clay are out of their natural position, breaking the series made out in Europe for the whole world.

The Oolitic series which had been denied to America, I have found in the Cumberland basin, but reduced to a thin stratum, imbedded in other limestone. This Oolite is not the false Oolite of Europe, or granular sandy limestone; but the true Oolite, formed by small white hollow globules, similar to the roe of fishes.

My natural geological theory of these western strata, which was taught in my lectures in the University of Lexington as early as 1819 and 1820, consists in deeming all these formations, beds and strata, without exception, formed by alternate submarine eruptions of matter, slime or water in the primitive ocean, from oceanic SALSES or volcanoes without fire. The diluvium was formed by a flood of eruptive waters when the land had been uncovered by the ocean. This theory I am prepared to support and maintain, prove and defend against all the geologists of England, France, America, or the whole world: whatever be the system they may have formed by looking at a few European or local formations elsewhere.

The minerals found in them are chiefly iron, hematite, pyrites, lead, zinc, manganese, calcedony, jasper, onyx, chert, quartz, barytes, amethyst, beryls, spars, marlstone, bolites, nitre, salt, bitumen, sulphur, alum, vitriol, geodes, &c.

22. MINERALOGY.

Gold Mines of North America. By C. S. R.

The gold mines of the United States, were known to the Indians in 1539, when Soto invaded them; but they had the ability to bewilder him, and conceal them. Else this country would have been colonised or desolated by the Spaniards. The French of Laudoniere and the first settlers of Virginia also vainly sought them. Their knowledge was almost lost, when discovered again in N. Carolina towards 1804. The first gold sent from thence to the U. S. Mint was in 1814. The quantity was small, but has been increasing ever since. In 1830 the Mint received and coined $134,000 of gold, of which

$128,000	from N. Carolina.
3,500	S. Carolina.
2,500	Virginia.

But last year, 1831, the quantity received and coined was $798,000: a prodigious increase of $670,000 in one year.

$476,000	from Georgia.
294,000	N. and S. Carolina.
26,000	Virginia.
1,000	Alabama.
1,000	Tennessee.

At this rate, the southern states will become a gold mining country. The gold is chiefly found in diluvial and alluvial barren tracts near the primitive granitic range, called Blue mts. or Kitaniny, where it blends with the Apalachian mts. the southern termination of the gritty Alleghany. It is procured by washing chiefly. Some veins have lately been found, and begin to be worked.

The Cheroki country, which is in the very centre of such region and mountains, is supposed to be very rich in gold, having perhaps veins of it in site. This has increased the cupidity of the Georgians, who have invaded those mines, and want to compel the Cherokis to evacuate the land; by nearly imitating the Spaniards, and making the Cherokis (who are as civilized as the Georgians) outlaws in their country.

Gold mines bring no solid wealth, they are soon exhausted, or the proceeds wasted. Georgia will find it out at her cost. Meantime companies and adventurers are pursuing this delusive search; some succeed, but as many fail or hardly procure gold enough to repay their expenses. But sterile worthless lands are becoming valuable, and often sell at random and high rates to speculators.

23. COMMERCE.

Plan of a new Trading Voyage, of Industry and Science.

Our nation is the most enterprising in the world, in maritime Commerce. Our mariners penetrate in all the seas in pursuit of gain, trade, and fisheries. The whale and seal fisheries have been sources of wealth and comforts for all the sea-ports which have undertaken them. The most arduous of all, that of whales, chiefly pursued in Nantucket, New Bedford, and latterly Hudson, is a nursery for hardy seamen. About 50 ships are constantly employed in it; the whole crew go on shares instead of wages, and often make small fortunes to settle at home afterwards. The whales have been pursued all over the globe, and latterly in the stormy seas of Japan. The sealing voyages are equally arduous, requiring a residence on desolate islands, the austral frozen lands of Gheritz, South Shetland, &c.

We mean to propose another trade or fishery somewhat similar, less dangerous, less arduous, yet quite as profitable, and without any of the bad chances of the whaling and sealing voyages, which are sometimes precarious. We hope that our hardy mariners and enterprising merchants will listen to us and try this new commerce; making money by it, at the same time that they advance science and knowledge.

Here is the object and plan.

A vessel must be fitted out to cruize all over the seas, to pick up, preserve and bring home, a whole cargo of fishes, shells, sea-birds, seals, and every thing produced by the ocean, the shores, or accessible rivers. Besides landing in many parts and collecting in the same way, land animals, quadrupeds, birds, snakes, land shells, minerals, specimens of rocks, plants, seeds, &c.

That such a scientific voyage may be made profitable is proved 1. By the great price paid in the U. S. already by showmen for living animals brought for sale, elephants, rhinoceros, camels, lions, &c. 2. By the good price paid for their skins when they died in the passage; the skin of a rhinoceros sold for $500 for a museum. 3. By the value which shells and corals have had, even when common and sold at auction, while rare ones fetch high prices. 4. By the increasing taste for natural history, geology, mineralogy and botany, all over the United States. 5. By the number of museums already established, and their competition to have rare things. 6. By the private cabinets increasing every year. 7. By their multiplicity when cheap objects will be procurable. 8. By the wants of universities, colleges and schools for museums, mineralogical cabinets, herbariums, &c. 9. By the several learned societies, zoological, geological and philosophical vying to collect rare specimens and sets of rocks, minerals, plants, animals, &c. 10. By the need of botanical gardens, gentlemen, farmers, &c. for seeds of curious plants or useful productions, &c. &c.

There is no fear that a whole cargo would be unsaleable: a market for it would be found in all our large cities, and chiefly Philadelphia, New York, Baltimore, &c. But besides the whole of Europe would be open to us as a market, for in France, Germany and England alone, there are 5000 museums and cabinets, constantly buying. We have even heard of a whole cargo of 400 tons of sea shells in bulk being sent from Peru to London not many years ago. When these objects shall be brought home in plenty and cheap, as many museums and cabinets can be formed in the United States before the year 1850.

Therefore such voyage, trade and speculation, will be available and profitable. The cost will be almost nothing; every thing is to be got by the crew, without half of the labour and disasters attending sealing and whaling. A small vessel, brig or schooner of 120 to 180 tons would

do for the first experiment, 12 to 16 men could navigate it, half the number required for whaling. The outfits would be only staves and planks to be made up into casks and boxes on board, some casks of liquor to preserve fishes, &c., large fishes may be eaten and the skin only preserved in brine. Shells and stones cost no trouble to pick and keep. Some paper for drying plants, salt, nets, bottles, &c. Besides one or two years provisions for the small crew. No port charges to pay, the vessel need not go into any port to trade. The outfits may be insured just like those of whalemen at 5 or 6 per cent. per annum only.

We should not advise the vessel to be fitted for sealing and whaling at the same time; because it is more expensive, and the crew might neglect the object of the voyage in pursuit of whales. We should rather advise, if a greater capital is disponible, to fill up the ship with articles that may sell with some profit at ports in the way, such as flour and provisions, &c.; or else to take out a freight to the West Indies or Brazil at the outset, and set off from thence on the voyage.

We deem that a captain of common capacity, but some education, would do to conduct such a voyage; if he has some acquaintance with science, or will follow the written instructions closely still better; otherwise there must be a supercargo on board, acquainted with natural sciences, to direct the proceedings.

As to the places to go, no one can go amiss. Any where will do; but the most healthy, fruitful, and unexplored countries best of all. For instance: Brazil and Patagonia, Chili, Peru, Guatimala, West Mexico, California, East coast of Africa, Borneo, Philippines, New Guinea, Australia or New Holland, the South Sea Islands, &c.

Any one exploring the coasts of those countries for one or two years could not fail to bring a valuable cargo of all these natural notions, from a huge Sea Elephant, head, skin and all, down to 10,000 fishes picked up at sea; and 5000 kinds of shells, 200 of each kind would be one million, which at one cent apiece only amount to $10,000, and some shells will be worth a dollar instead of a cent.

Calculation of a cargo at the lowest prices:

1,000,000 shells at 1 cent	$10,000
10,000 fishes at 25 cents	2,500
Minerals, rocks, fossils, &c.	2,000
Living animals -	2,000
Other animals preserved	2,500
Preserved plants and seeds	1,500
	$20,000

The outfits could not cost more than $2,000, the ship freight for hulk alone $100 per month, or $2400 for 2 years; say $5000 with insurance; remain $15,000 profit. The half or $7500 to the crew, which in 20 shares would give $375 for each, and the other $7500 for the outfitters, being 375 per cent. profit on $2000 for two years! But perhaps by better sales, $500 to 700 may be divided on each share.

All this is so plausible, that we invite the experiment to be made at once, and any ship owner or whaler who will undertake it may receive encouragement in Philadelphia, by writing to us post paid, if no one will try, we mean to try it ourselves, by chartering a small brig, and raising the $2000 outfits by dividing them in 20 shares of $100, of which 3 are already subscribed.

We shall be proud of being the first to open a new source of industry and knowledge to our country. We have had this plan in contemplation for several years past; but have waited to publish it, until we have seen the time arrived when it can be made very profitable. Formerly, when younger, we should have been delighted to go on such a voyage; but then science was not yet budding as it is now. We must depend on some active young man

to go as supercargo, who can keep a good journal of the voyage, and note the places where every thing is found. The Rensalaer school might perhaps furnish some pupils suitable for such a scientific undertaking, or else some other Institution and college; let them apply to us post paid.

The outfitters' shares are to be 20, as stated, of $100 each, and the crew's shares as many, held by 16 persons as follow:

1 A captain	-	3 shares
1 A first mate	-	2
1 A supercargo	-	2
1 A third mate	-	1½
1 A surgeon and 2d sup.		1½
1 A carpenter	-	1
7 sailors, each 1	-	7
1 A cook	-	1
2 boys, each ½	-	1
16 men and boys		20 shares

C. S. RAFINESQUE,
In behalf of himself and others in Philadelphia.

24. ATLANTIC REVIEW.

We propose as far as our limits will allow, to give Analytical and Eclectic Reviews, of the principal American works which increase or revive knowledge. Meantime we now give the titles with critical notices of some such, lately published in America, which may thus be reviewed hereafter. We mean to notice in this manner, all valuable American works as they appear.

1. Researches Philosophical and Antiquarian concerning the Aboriginal history of America. By J. H. M'Culloh, Jr. M. D. Baltimore, 1829, 1 vol. 8vo fig.—Very good book, so far as it goes, many omissions, but much latent knowledge on America is here revived.

2. Narrative of the Captivity and Adventures of John Tanner, who resided 30 years among the Indians. By E. James, M. D. New York, 1830, 1 vol. 8vo fig.—Romantic, but with much additional information on Indian manners and languages. The *Metai* Graphic system of the Lenap tribes with 110 glyphs or characters is peculiarly curious and novel.

3. David Cusick's Sketches of the Ancient History of the Six Nations (Onguys or Iroquois) Lewistown, 1827, 12mo Very curious little work by a Tuscorora Indian, giving the traditions of the Onguy tribes. The whole new and important for American history.

4. Travels in Malta, Sicily and Gibraltar. By Andrew Biglow, Boston, 1831, 8vo. fig.—A prolix tourist giving some important details on Etna, &c. mixt with some errors.

5. Visit to the South Seas in 1829 and 30. By C. Stewart, New York, 1831. 2 vols. 12mo. fig.—Lively narrative and picture of the Sandwich and Society islands in their new improved state, affording some increase to our knowledge.

6. Memoir of Cabot, author anonymous! Philadelphia, 1831, 8vo.—A work of historical and geographical scrutiny and criticism, reviving lost knowledge: but anonymous critics are seldom believed.

7. A mariner's Sketches, anonymous. Providence, 1830, 12mo.—A lively but superficial work with many good maritime details; the most valuable are on Gheritz land and the seal fishery.

8. Tour to Greece and the Mediterranean. By Samuel Woodruff, Hartford, 1 vol. 12mo. —Agent of the Greek committee and gifts to Greece. Some useful information on Malta and Greece.

9. Observations on Greece, by R. Anderson, Boston, 1830, 12mo.—A modest title for good travels in Greece. Sent by the foreign Mission Society. Much useful information.

10. Natural History of the Bible, by Thadeus Harris, Boston, 1830, 8vo. Learned, curious and useful book; few mistakes. The ancient names of natural objects given there, are of importance on many accounts.

11. Cuvier's Discourse on the Revolutions of the Globe. Translation, Philadelphia, 1831, 12mo. A classical book badly translated.

12. Cuvier's Animal Kingdom, translated by Dr. M'Murtrie. A classical work in Philosophical Zoology, but deficient in details. Cuvier deserved a better translator: he is here mutilated and perverted. The appendix is quite deficient.

13. Lindley's Introduction to the Natural System of Botany; with the arrangement of the American Genera under the Natural Families, by Dr. John Torrey, New York, 1831, 8vo. Good work, the first attempt to introduce the improved Botany of Europe into general use here. But many omissions and imperfections yet, both in the text and appendix.

14. Cyclopedia Americana, translated from a German Lexicon with additions, by several collaborators; Philadelphia, 1830-32. Several 8vo vols. half completed. Neither a Cyclopedia, nor an American work! but a medley, similar to Nicholson's; made popular as in Germany by puffs: useful as far as it goes to diffuse knowledge; but unfortunately neglecting many solid and practical portions of it. Some sciences not even mentioned.

15, Monthly American Journal of Geology and Natural Sciences, by C. W. Featherstonaugh, Philadelphia, 1831 and 32, fig. Useful periodical work well begun, but containing as yet but few materials on American Geology and Oryctology, which

require active exertions and travels to collect.

16. Voyages of the Companions of Columbus, by W. Irvin; Philadelphia, 1831, 8vo. A needful revival of American knowledge, made popular by the style and fame of the writer, like his life of Columbus.

17. History of New Plymouth, by F. Baylies, Boston, 1830, 2 vols. 8vo. A prolix but valuable fragment of North American History. Much historical knowledge is here revived. It extents from 1620 to 1692, when New Plymouth was united to Massachusets.

18. History of Louisiana by Barbé Marbois, translation, Philadelphia, 1830, 8vo. Well written, but deficient in the early history; better in later times.

19. History of Pennsylvania to 1776 by Gordon, Philadelphia, 1828, 8vo. Well written, few omissions, a creditable work.

20. History of New York, by Moulton. New York, 1st and 2d parts, 8vo. 1824 and 1826. Excellent work, copious on early history, only carried as yet to 1633.

21. Treaties of the United States with the Indian tribes; Washington, 1826, 8vo. published by order of Congress. Furnishing important official documents for History.

22. Annals of America, by Holmes, 2d edition, Cambridge, 1829, 2 vols. 8vo. False title: it is a Chronological History of the English Colonies of North America only, and the United States; compendious, yet lame.

23. Travels in Guatimala or the United Provinces of Central America in 1827-8, by Dunn, New York, 1828, 8vo. Interesting account of a country almost unknown, by an agent of the Bible Society; rather superficial, but many additions to knowledge.

24. Sketches of a Tour to the Lakes in 1826-7, by Th. L. M'Kinney, Baltimore, 1827, 8vo. fig. Tedious Epistles of a tourist or rather Indian agent; but some addition to knowledge may be gleaned therein.

25 Narrative of a second Expedition to the shores of the American Polar Sea, by Capt. J. Franklin and Dr. J. Richardson, Philadelphia, 1828, 8vo. Important addition to geography, geology and all the cognate sciences.

26. Ornithological Biography of the Birds of America, by J. J. Audubon, Philadelphia, 1831, 4to, first volume, containing the Biography of 100 Birds. Excellent work of an author uniting the characters of a naturalist, a painter, a traveller, and a close observer. It is the text of his gigantic work on our birds, or their colored figures of natural size, a splendid monument of genius and fine arts.

27. Medical Flora, or Manual of Medical Botany, of the United States of North America, by C. S. Rafinesque, Philadelphia, 1828-30, 2 vols. 12mo. 100 fig. A very useful compilation, embodying all the actual knowledge on our Medical Botany, with a multitude of original additions, both medical and botanical.

28. **The Pulmist, or the art to cure and prevent the Consumption or Chronic Phthisis, by C. S. Rafinesque, Philad. 1829, 12mo. fig.** This little work teaches what many physicians wrongly despair of, how to cure effectually this fatal disease; *nihil desperandum!*

29. Enumeration and account of some remarkable Objects of the Cabinet of Prof. Rafinesque, Philad. 1831, 8vo. tract. In 16 columns this tract describes 110 New objects of Zoology, chiefly fossils of Kentucky, more than thick volumes often can do.

30. Monograph of the Bivalve Shells of the river Ohio, by C. S. Rafinesque, translated from the French of 1820 by C. A. Poulson, Philadelphia, 1832, 12mo. 1 fig. 68 sp. The first original work on our fluviatile choncholog y. The translator has omitted the 70 figures of the original, and the continuation carried to 113 species published in 1831. He might also have added the posterior synonyms to aid the students.

31. Manual of Botany for North America, by Prof. A. Eaton, fifth edition, Albany, 1829, 12mo. A popular compilation; few reach here so many editions; this last is much enlarged and improved, including the southern plants of Pursh, Nuttal and Elliott, but no one else: therefore deficient as a compilation for general use.

32. Geological Text Book on North American Geology, by Prof. A. Eaton, Albany, 1830, 8vo, fig. and a Geological map of the state of New York. Tolerable attempt so far as New York is concerned, but totally deficient in oryctology or fossil remains, and mistaking the geological region from Boston to Lake Erie for the whole of N. America, as the English Geologists mistake the Geology of England for that of the world.

33. Webster's Dictionary of the English Language, Boston, 1830, 2 vols. 4to, and abridged in a thick 8vo. Bulky, elaborate work, adding many thousand words to our Lexicons; but lacking yet as many more. The Etymological part is copious, yet totally deficient in the Sanscrit, first parent of the English as well as Latin and Greek, and where all their words, without hardly any exception, can be traced.

25. MISCELLANY.

Periodical Press.—Nearly 1000 periodical publications of all kinds are printed in the United States; but some are of very limited circulation, supported by Advertisements and the monopoly of low rates of postage. In France, they have doubled since the Revolution of July 1830. They were 210 before, of which 150 out of Paris; now they are nearly 400, of which 310 out of Paris.

A Geological society of Pennsylvania has been established in Philadelphia on the 22d February, 1831. Mr. Gibson is the president and P. A. Browne, secr'y It has chiefly in view a complete geological survey of this state.

Phthisis or Consumption.—In 1831, the

deaths from this fatal disease have been 4807 in London, out of 25,337 total deaths, or nearly one in five. In New York, 1023 out of 6362, or nearly one in six. One-half, at least, of these victims of credulity in the ignorance of the faculty, could have been saved and restored by reading the Pulmist, and following its directions. In Philadelphia, only 673 deaths from Consumption happened in 1831, out of a mortality of 4939, or less than one in seven, about 1 in 7½. Is not this difference to be partly ascribed to the Pulmel being more used there than in New York, and not yet introduced in London?

26. FRAGMENT OF A PHILOSOPHICAL POEM ON KNOWLEDGE.

Truth is the sun, and Knowledge solar light
Streaming from truth, in beams effulgent bright,
To shine upon, delight, adorn, and bind,
By links of love, the human soul and mind.
* * * * * * * *
Yes, God and truth are one, and both, what is,
Has been, will be. And truth we may well deem
That part of God, which we can see and feel.
To store the mind with rays of knowledge bright,
Is sharing truth, a beam divine to hold.
Those who neglect or spurn this lofty aim,
In mental darkness live, and blindness creep
Through life; while those who seek shall ever find
What they require, as God and truth have said.
A wish soon leads to active mental search
Of many kinds, to suit the taste of all.
Happy the men who feel the noble wish,
And with delight the flow'ry path pursue;
But happier still when truth has reach'd the mind,
In streams of light of many hues and shades.
By thrilling sway, the dazzling flood delights
To fill and feed the human soul with joys.
We crave, and we receive the daily streams
Of lovely truth, from youth to age imparted:
The more we crave, the more we do receive
Without disgust, since knowledge never cloys.
How sweet are those delightful tasks of truth,
Inviting men to share the joys of heaven,
Ere they can reach this last eternal home
Of virtuous souls and minds. Through earth and sky
The mental range is found to roam at will,
And ramble freely there in search of science,
Subservient to the call of daring man:
While grateful truth becomes, his friend and tool
Of him who was, who is, an atom born
But yesterday, to shine awhile and sink.
Yet truth eternal dwells with him this while,
And at his call does not disdain to lead
By gentle steps, from dross to gold divine,
His craving mind; from dark to brighter regions
Of knowledge pure, a lofty daring flight
They take, to reach the scope of human life,
The thirst for light and bliss; the source of both
To find, around the throne of HIM, who rules
The world on high. Since God and truth are one!

C. S. R.

ERRATA.

Page 22, col. 1, *for* presented *read* preserved.
24, 2, *for* most given *read* not given.